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SWEET'S ARCHITECTURAL CATALOGUES

SWEET'S ARCHITECTURAL CATALOGUES

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on
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FOR THE YEAR 1933
IN FOUR VOLUMES

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TO ARCHITECTS, ENGINEERS, GENERAL CONTRACTORS
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1933 Edition

This up-to-date file of catalogues is the twenty-seventh received by the profession since 1906. Like its predecessors its purpose is to promote effective and economical co-operation between those who design and construct buildings and those who manufacture building products—the ultimate aim being better service to a common client, the public.

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See Dumps—Ash—Fireplace

Doors—Cont.

Balanced
Ellison Bronze Co., Inc. B106

Bifolding and Canopy
See Doors—Folding Horizontal

Canopy
See Doors—Airplane Hangar

Casement
(See also Windows—Casement)
Cotswold B283
Crittall Manufacturing Co., Inc. B239
Detroit Steel Products Co. B253
Fenestra B253
Hope's Windows, Inc. B283
Lemco B308
Lundell-Eckberg Mfg. Co., Inc. B308
Roddis Lumber and Veneer Co. B431
Truscon Steel Co. B313
Universal B239
Specifications B239; B283

Cell
See Jail Construction and Equipment

Clothes Chute
Auer Register Co. D470
Ideal Cabinet Corp., Div. of Deslauriers Metal Products Co., Inc. D333
Lawco D334
Lawson, F. H., Co. D334

Coal—Basement
See Chutes—Coal—Basement or Cellar

Cold Storage or Refrigerator
Jamison Cold Storage Door Co. D770
Stevenson D770
Victor D770

Corrugated Steel—Sliding, Swinging, Folding, Rolling, etc.
Alstele B152
Firecraft Door Co. B152
Fyrgard B176
R-W C398
Richards-Wilcox Mfg. Co. C398
Seco B173
Security Fire Door Co. B173
Vertel B173

Dumbwaiter
See Dumbwaiter Doors

Electrically Operated
See Doors—Mechanically Operated

Elevator — Counterbalanced — Corrugated, Tin Clad, Metal Covered, etc.
Fyrgard B176
Highwood Dumbwaiter Co. D846
Peelle Co. B153
Seco B173
Security Fire Door Co. B173
Simplex Door Co. B178
See also page B152
Specifications B153; B173

Elevator—Passenger
See Enclosures—Elevator; Doors—Hollow Metal; Doors—Metal Covered; Doors—Veneered—Fireproof (Asbestos and Wood Combination)

Elevator—Telescoping—Vertical Sliding
Fyrgard B176
Highwood Dumbwaiter Co. D846
Peelle Co. B153
Sec-Tel B173
Security Fire Door Co. B173
Telco B153
Specifications B153

Entrance — Bronze, Brass, Iron, Aluminum, Chrome and Nickel Alloys, etc.
Alcoa A822
Aluminum Co. of America A822
Art Metal Construction Co. A827; B103
Badger Wire & Iron Works A828
Bayer, A. J., Company A829
Cincinnati Mfg. Co. A832
Ellison Bronze Co., Inc. A833

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Sidewalk, Metal or Vault Light—Safety Guarded—Automatically Opened and Closed

Elian, Frank, & Co....D576
G&G....D567
Gillis & Geoghegan....D567
Hoistwell....D576
Morris, Herbert, Inc....D580
Silent Hoist Winch & Crane Co....D584
See also page....D578
Specifications....D567; D576

Sidewalk—Opening and Closing Devices for

Elian, Frank, & Co....D576
G&G....D567
Gillis & Geoghegan....D567
Specifications....D567

Sidewalk—Vault Light

American 3 Way-Luxfer Prism Co....A753
Richards & Kelly Mfg. Co....A676
3-Way....A753
See also pages....A752; A754

Sliding, Folding, etc.

(For Large Openings as Garages, Warehouses, etc.)

Balance-Lift Door Co., Inc....C380
Coburn Trolley Track Mfg. Co....C386
Crooks, W. D., & Sons....B414
Detroit Steel Products Co....B253
Fenestra....B253
Fol-Dec....C548
Folding Products Corp....C548
Horifold....B173
Horn Folding Partition Co....C550
Kinnear Mfg. Co....C390
Overhead Door Corp....C394
Peelle Co....B153
Rol-Top....C390
Security Fire Door Co....B173
Truscon Steel Co....B313
Wilson, J. G., Corp....C408
See also page....B144
Specifications....B153; B313

Sound Retarding

Acoustical Corp. of America....B762
Circle A....C556
Compound and Pyrono Door Co....B790
Evanston....B792
Farley & Loetscher Mfg. Co....B417
Farlite....B417
Hamlin, Irving....B792
Hardwood Products Corp....B420
Horn Folding Partition Co....C550
Newcastle Products, Inc....C556
Richards-Wilcox Mfg. Co....C398
Trimount....B790
U.S.G.....B723
United States Gypsum Co....B723
Specifications....B790; C550

Stack

See Doors—Ash Pit or Clean-out

Steel

See Doors—Industrial; Doors—Sheet Steel

Stock

See Doors—Corrugated Steel, Hollow Metal, Metal Covered, Wood, etc.

Telescoping

Truscon Steel Co....B313

Tin Clad—Sliding or Swinging

Air-Kore....B222
Fyrgard....B176
Mahon, R. C., Co....B146
Mecco....B148
Metal Clad Doors, Inc....B147
Metcla....B147
Penco....C479
Penn Metal Co. of Penna....C479
Richards-Wilcox Mfg. Co....C398
Sec-Tel....B173
Security Fire Door Co....B173
Wilson, J. G., Corp....B222
See also pages....A654; B144; B145; B150; B152

Doors—Cont.

Toilet—Steel

Ebco....C520
Ebinger, D. A., Sanitary Mfg. Co....C520
Ferrometal....C528
Flush-Metal Partition Corp....C521
Hart & Hutchinson Co., Div. of The Hart Cooley, Highton Co....C524
Lawson-Milwaukee....C528
Marblmetal....C507
Metalunits....C533
Mills Co....C507
Milwaukee Stamping Co....C528
Panelmetal....C521
Silentsteel....C520
Sturdibilt....C520
Veneer-Steel....C524
Weis, Henry, Mfg. Co., Inc....C533
WeiSteel....C533
Specifications....C524; C528; C533

Tubular Steel

See Doors—Hollow Metal; Doors—Industrial

Vault Front

Diebold Safe & Lock Co....C843
Herring-Hall-Marvin Safe Co....C858
Mosler Safe Co....C857
Triumph....C843
York Safe and Lock Co....C863

Veneered—Fireproof (Asbestos and Wood Combination)

Compound and Pyrono Door Co....B790
Py-ro-no....B790
Roddis Lumber and Veneer Co....B431
Specifications....B790

Veneered—Flush—Phenolic Fiber

Formica Insulation Co....C106

Veneered—Flush and Paneled

Carnahan Mfg. Co....B416
Compound and Pyrono Door Co....B790
Crooks, W. D., & Sons....B414
Evans....B416
Farley & Loetscher Mfg. Co....B417
Farlite....B417
Hardwood Products Corp....B420
Hyde-Murphy Co....B425
Inner-Frame....B426
Laminex....B430
Max-Ideal....B426
McMillen, R., Co....B426
No-Warp....B425
Nu-Mold....B426
Qualitybilt....B417
Roddis Lumber and Veneer Co....B431
Sterling....B431
Wheeler, Osgood Co....B430
Specifications....B414; B420; B426; B431; B790

Veneered, Flush and Paneled—of Fire Resisting Wood

Hardwood Products Corp....B420
Specifications....B420

Ventilator Paneled

Equipment & Supply Co., Inc....B119
Kawneer Co....B128
Paneldor....B119
Roddis Lumber and Veneer Co....B431
Weaver Dorvent....B431

Vertical Sliding or Telescoping

Allen-Drew Co., Div. of Babcock-Davis Corp....C546
Detroit Steel Products Co....B253
Fenestra....B253
Fyrgard....B176
Horn Folding Partition Co....C550
Peelle Co....B153
Sec-Tel....B173
Security Fire Door Co....B173
Truscon Steel Co....B313
Telco....B153
Vertel....B173
See also page....B770
Specifications....B153; B313

Doors—Cont.

Wood—I-Beam Rail and Stile
R-W C398
Richards-Wilcox Mfg. Co C398
SupeR-Way C398

Wood—Sliding, Folding, etc.
See Doors—Sliding, Folding, etc.

Wood—Solid
Wheeler, Osgood Co B430
WOCO B430
See also page B426

X-Ray Protective
Bar-Ray Products, Inc B804
Crooks, W. D., & Sons B414
Hamlin, Irving B792
Hardwood Products Corp B420
Ideal B790
Monarch B790
Ray Proof Corp B806
Roddis Lumber and Veneer Co B431
Specifications B804; B806

Downspouts

Metal
See Pipe—Conductor

Drain

Boards—Nickel Copper Alloy
Inco C609
International Nickel Co., Inc C609
Monel Metal C609
Straitline C609
Streamline C609

Boards—Phenolic Fiber
Duralite B431
Formica Insulation Co C106
Micarta C112
Roddis Lumber & Veneer Co B431
Westinghouse Electric & Mfg. Co C112

Boards—Phenolic Fiber—Veneered Wood
United States Plywood Co., Inc B461
Weldwood B461

Pipe
See Pipe—Drain

Pipe Packing
See Packing—Drain Pipe

Tile
See page D161

Drainers

Cellar
See Ejectors—Hydraulic—Automatic—Cellar Draining; Pumps—Bilge

Drains

Backwater Valve
AcmE D172
Boosey, Norman, Mfg. Co D166
Compound Injector & Specialty Co D172
Crampton-Farley Brass Co D174
Dehn's D172
Josam Mfg. Co D176
San-Seal-O D174
Signet D174
Wade Iron Sanitary Mfg. Co D180

Double Drainage
American Foundry & Mfg. Co D162
Josam Mfg. Co D176

Floor, Yard, etc.
AcmE D172
American Foundry & Mfg. Co D162
Anti-clog D171
Blake Specialty Co D164
Boosey, Norman, Mfg. Co D166
Busch, G. Walton, & Sons, Inc D170
Code-Pruf D170
Compound Injector & Specialty Co D172
Covert, H. W., Co D171
Crampton-Farley Brass Co D174
Dehn's D172
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Duriron Co., Inc D144
Fiat Metal Mfg. Co D273
Flockhart Foundry Co A755
Josam Mfg. Co D176
PeerlesS D172
San-Seal-O D174
Signet D174
Simplex D164
Testite D164
Wade Iron Sanitary Mfg. Co D180
See also page A752
Specifications D171

Flushing
Wade Iron Sanitary Mfg. Co D180

Garage—Mud Arresting
Anti-clog D171
Blake Specialty Co D164
Busch, G. Walton, & Sons, Inc D170
Code-Pruf D170
Compound Injector & Specialty Co D172
Covert, H. W., Co D171
Dehn's D172
Josam Mfg. Co D176
PeerlesS D172
Wade Iron Sanitary Mfg. Co D180
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Specifications D171

Non-clog
Anti-clog D171
Covert, H. W., Co D171
Josam Mfg. Co D176
Specifications D171

Oil or Grease Separating
AcmE D172
Boosey, Norman, Mfg. Co D166
CentrifugaL D172
Compound Injector & Specialty Co D172
Dehn's D172
GeM D172
Josam Mfg. Co D176
Josam-Marsh D176
Stroudsburg Septic-Tank Co D161
Wade Iron Sanitary Mfg. Co D180
See also pages D156; D164

Refrigerator Drip
See page D176

Roadway
See Gratings—Drainage—Roadway

Roof
American Foundry & Mfg. Co D162
Barrett Co A441
Blake Specialty Co D164
Boosey, Norman, Mfg. Co D166
Busch, G. Walton, & Sons, Inc D170
Code-Pruf D170
Holt A441
Josam Mfg. Co D176
Mahon, R. C., Co D175
Simplex D164
Wade Iron Sanitary Mfg. Co D180
Specifications A441

Scupper
Aeolus Dickinson Industrial Div. Paul Dickinson, Inc. A677
Air-Gate A677
Dickinson A677
Windshield Scupper Co A760
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Specifications A760

Shower or Urinal
See Drains—Floor, Yard, etc.

Stable Gutter
Louden Machinery Co C899

Swimming Pool
(See also Swimming Pool Drains, Strainers and Fittings)
Jackson, Wm. H., Co C811
Josam Mfg. Co D176
See also pages C815; D164

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American Foundry & Mfg. Co....D162
Busch, G. Walton, & Sons, Inc....D170
Code-Pruf....D170
Crampton-Farley Brass Co....D174
Josam Mfg. Co....D176
Signet....D174
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Drawer

Slides

See Slides—Drawer

Drawers

Bench-Steel

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Steel Shelving

See Shelving—Steel

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Kitchen

See Cabinets—Kitchen

Dressings

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Drills

Electric—Portable

Ryerson, Joseph T., & Son, Inc....A170

Drinking Water

Fountains

See Fountains—Drinking

Water Systems

See Fountains—Drinking; Refrigerating Systems, Drinking Water; Refrigerating and Ice Making Machinery and Plants; Coolers, Drinking Water

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Chicago Dryer Co....C618
Marathon....C621
Mercury....C621
Minute Man....C621
Trojan....C621
Troy Laundry Machinery Co., Inc....C621
See also page....B220

Clothes—Coal, Electric, Gas or Steam Heated

Chicago Dryer Co....C618
Chicago-Francis....C618
Domestic....C620
Judelson Dryer Corp....C620
Prometheus Electric Corp....C877
See also page....C835

Clothes—Tumbler

ES....D858
Minute Man....C621
Premier....C621
Troy Laundry Machinery Co., Inc....C621

X-Ray Film

Buck X-Ograph Co....C836

Ducts

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See Conduit—Tin or Terne Plate

Dumbwaiter

Doors—Counterbalanced

Equibalanced....D810
Firecraft Door Co....B152
Kiesling, John W., & Son, Inc....D847
McLauthlin, Geo., T., Co....D810
Peelle Co....B153
Seco....D857
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Specifications....B153; D857

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Art Metal Construction Co....B103
Firecraft Door Co....B152
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Doors — Metal Covered — Aluminum, Copper, Brass, Steel, etc.

Philipp Mfg. Co....B150
Seco....D857
Security Fire Door Co....D857
See also page....B176

Doors—Steel Plate

Firecraft Door Co....B152
Peelle Co....B153
Seco....D857
Security Fire Door Co....D857
Specifications....B153

Dumbwaiters

(See also Elevators; Hoists; Lifts)

Doors for

See Dumbwaiter Doors

Electric

Active Elevator Co....D828
Beckwith Elevator Co., Inc....D832
Burwak Elevator Co....D807
Capital Lift & Mfg. Co....D831
Chelsea Elevator Co....D834
Electric Dumbwaiters Inc....D838
Elevator Supplies Co., Inc....D858
Energy Elevator Co....D840
Highwood Dumbwaiter Co....D846
McLauthlin, Geo., T., Co....D810
Otis Elevator Co....D812
Payne, F. S., Co....D816
Sedgwick Machine Works....D850
Televator....D858
The Durie....D846
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See also pages....D818; D820
Specifications....D834; D838; D840; D850

Hand Power

Active Elevator Co....D828
Beckwith Elevator Co., Inc....D832
Capital Lift & Mfg. Co....D831
Chelduogear....D834
Chelgear....D834
Chelnogear....D834
Chelsea Elevator Co....D834
Energy Elevator Co....D840
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Highwood Dumbwaiter Co....D846
Kiesling, John W., & Son, Inc....D847
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Matot, D. A....D854
McLauthlin, Geo., T., Co....D810
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Sedgwick Machine Works....D850
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Specifications....D834; D840; D846; D850

Hydraulic

McLauthlin, Geo., T., Co....D810

Tube

Matot, D. A....D854
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Telewaiter....D834
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Specifications....D850

Undercounter

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Energy Elevator Co....D840
Highwood Dumbwaiter Co....D846
Kiesling, John W., & Son, Inc....D847
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Sedgwick Machine Works....D850
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Specifications....D850

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Ash—Fireplace
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Collecting Systems
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Adensite Co., Inc....A237
Agatex A298
Anti-Hydro Waterproofing Co....A238
Aquabar Waterproofing Products, Inc....A240
Armortop A238
Art-Roc A298
Art-Roc-Colorless A298
B-T B857
Coldura A294
Colormix A273
Colorundum A251
Conco A240
Crysteel A240
Dehydratine No. 80....A251
Durocon A240
Duro-Mix A240
Dycrome A273
Ferricon A298
Ferro-Fax A251
Ferrofloor A250
Flintox A297
Fort Pitt Chemical Co....A250
Glaze-Coat A273
Harcol A294
Hillyard Chemical Co....C144
Horn, A. C., Co....A251
Hornstone Crystals....A251
Hurundum A298
Hydratite A251
Iron-Clad A240
Iron-Cote A296
Kemi-Kal A296
Kemi-Kote C314
Koncrex A251
Konseal A296
Lapidolith A294
Lithochrome A668
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Master Mix....A273
Maximent Co....B857
Merco C173
Metalicron A273
Omicron A273
R.I.W. A297
Repello C145
Rocor C179
Roman Plastic Products Corp....C179
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Sherwin-Williams Co....C183
Solvay Sales Corp....A293
Sonneborn, L., Sons, Inc....A294
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Sullivan Co....A296
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Toch Brothers Inc....A297
Tox-Mix A297
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Olo C178
Passonno-Hutcheon Co....C178
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Pittsburgh Plate Glass Co....C207
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Akins & Clark Inc....C888
Gorham Co....A837
International Art Foundries....A841
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McGann, T. F., & Sons Co....A845
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Lamb, J. and R., Studios....C284

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Floor Covering
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Garden Walk
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Hydraulic—Automatic—Cellar Draining
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Flanged or Screwed
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Machinery
Haslett Chute and Conveyor Co....C897
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See Interlocks—Elevator Door

Door Operators
See Operators—Door—Elevator

Doors
See Doors—Elevator; Enclosures—Elevator; Doors—Hollow Metal; Doors—Metal Covered; Doors—Veneered

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See Guide Rail Lubricators—Elevator

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See Signs—Illuminated—Electric—Interior

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See Signal Systems—Elevator

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(See also Dumbwaiters; Hoists; Lifts)

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See Hoists—Ash—Platform; Hoists—Ash—Telescopic—Electric; Hoists—Ash—Telescopic—Hand Power

Automatic Push Button
See Elevators—Electric

Automobile or Carriage
See Elevators—Hand Power; Elevators—Electric; Elevators—Hydraulic or Oildraulic

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Burwak Elevator Co....D807
Capital Lift & Mfg. Co....D808
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Elevette D848
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Beckwith Elevator Co., Inc....D832
Chelsea Elevator Co....D834
Energy Elevator Co....D840
Highwood Dumbwaiter Co....D846
Matot, D. A....D854
McLauthlin, Geo., T., Co....D810
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Oildraulic Lift Co....D811
Otis Elevator Co....D812
Warner Elevator Mfg. Co....D820
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Inclinator Co. of America....D848
Lowerlift C898
Otis Elevator Co....D812
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Televeyor D858

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Active Elevator Co....D828
Beckwith Elevator Co., Inc....D832
Elevette D848
Energy Elevator Co....D840
Highwood Dumbwaiter Co....D846
Inclinator Co. of America....D848
Matot, D. A....D854
McLauthlin, Geo., T., Co....D810
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See also pages....D809; D834
Specifications....D840; D846; D850

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Chelsea Elevator Co....D834
Energy Elevator Co....D840
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Gillespie, Robert, Co....D578
Highwood Dumbwaiter Co....D846
Kiesling, John W., & Son, Inc....D809
Matot, D. A....D854
McLauthlin, Geo., T., Co....D810
Morris, Herbert, Inc....D580
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Elevator Supplies Co., Inc....D858
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Exit Devices

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Banzai....C207
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Cabot, Samuel, Inc....C149
Cemcoat....A294
Da-Cote....C174
Dulux....C164
du Pont de Nemours, E. I., & Co., Inc....C164
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Banzai....C207
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Murphy Varnish Co....C174
O'Brien Varnish Co....C175
Olo-Lite....C178
Passonno-Hutcheon Co....C178
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Pittsburgh Plate Glass Co....C207
Plasco....C207
S.V.W.....C197
Satinette....C197
Sherwin-Williams Co....C183
Standard Varnish Works....C197
U. S. Gutta Percha Paint Co....C200
Wallhide....C207
Wal-Wite....A240
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Jamestown Metal Desk Co., Inc....B121
JoneSteel....B121
La Porte....B130
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Lord and Burnham Co....C906
Lutton, William H., Co., Inc....C913
Solar V-Bar....C913
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Radiator
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Shower Stall—Doors for
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Stock and Tool Room
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Tennis Court, Kennel Yard, Athletic Ground, etc.
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Toilet, Shower or Urinal
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Guth, Edwin F., Co D640
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Emerson Electric Mfg. Co D495
Ty-Fandolier A856
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American Blower Corp D494
Bishop & Babcock Sales Co D350
Buckeye Blower Co D433
Climator D444
Emerson Electric Mfg. Co D495
Forbes A708
Gehri, A., & Co., Inc D465
In-Bilt D498
Mueller, L. J., Furnace Co D444
Pacific Breeze D497
Pryanco D497
Pryne & Co., Inc D497
Silentair D465
Sirocco D494
Tri-Peller A708
Ventura D494
Victor Electric Products, Inc D498
West Wind Corp D499
Wing, L. J., Mfg. Co D500
Wing-Scruplex D500
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Ventilating or Exhaust—Acid Resistant

Duriron Co., Inc D144
Heatilator Co A784
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Burt Mfg. Co A682
Effico Wind Electric A685
F Electric A685
Hirschman, W. F., Co., Inc A685
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RPM A702
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Berger Bros. Co A618
Chase Brass & Copper Co A620
Fitrite A573
Hoyt A624
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Screen and Storm Sash

Casement Hardware Co C318
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Zimmerman, G. F. S., Co C330

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Treatments

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Bird & Son, inc B645
Cabot, Samuel, Inc B634
Carey, Philip, Co A509
Carey-Seal A509
Dur-A-Seal A509
Feltex A509
Fiberock A509
General Insulating & Mfg. Co B742
Gimco B742
Quilt B634
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Chain Link

Afco C914
American Fence Construction Co C914
Anchor Post Fence Co C917
Atlas Fence Co C920
Chieftain C928
Custodian C928
Cyclone Fence Co C924
Invincible C924
Page Fence Assn C926
Pittsburgh Steel Co C928
Stewart Iron Works Co., Inc C930
Wickwire Spencer Steel Co C933
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American Fence Construction Co C914
Atlas Fence Co C920
Cincinnati Iron Fence Co., Inc C922
Cyclone Fence Co C924
Fiske, J. W., Iron Works A834
Logan Co A844
Page Fence Assn C926
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Stewart Iron Works Co., Inc C930
Vulcan Rail & Construction Co A758
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Iron—Electrically Welded

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Anchor Post Fence Co C917
Stewart Iron Works Co., Inc C930
Wickwire Spencer Steel Co C933
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American Fence Construction Co C934
Anchor Post Fence Co C936
Cedarstrong C934
Dubois Fence & Garden Co., Inc C937
Elhide Co C940
French Provincial C941
Reeves, Robert C., Co C941
Reeveshire C941
Rusticraft Fence Co C942
Tendler C942

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Fireproof Safes

Berloy C461
Diebold Safe & Lock Co C843
Herring-Hall-Marvin Safe Co C858
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Art Metal Construction Co C436
A-S-E C458
Diebold Safe & Lock Co C843
Globe-Wernicke Co C440
Jamestown Metal Equipment Co C441
Master C458
Popular C458
Rekordisk C843
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Wood

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Filler

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Fillers

Concrete

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Barnsdall Tripoli Co A245
Komix A296
Loomis, W. H., Talc Corp A266
Loomite A266
Master Builders Co A273
Omicron A273
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Toch Brothers Inc A297
Toxbro A297
Vestal Chemical Laboratories C146
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Specifications C146

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Kleartone C197
Murphy Varnish Co C174
Pitcairn C207
Pittsburgh Plate Glass Co C207
Pyramid C175
Sherwin-Williams Co C183
Standard Varnish Works C197
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Film

Pass Boxes—X-Ray

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See Cabinets—X-Ray Film Transfer

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Air

Airmat D452
American Air Filter Co., Inc D452
Campbell Metal Window Corp B277
Climator D444
Double Duty D466
Dustop D468
Gehri, A., & Co., Inc D465
Independent Air Filter Co D466
Kompak D466
Mueller, L. J., Furnace Co D444
Owens-Illinois Glass Co D468
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Gravity or Pressure

Buhring Water Purifying Co D196
Consol D197
Consolidated Filters Co., Inc D197
Everson Filter Co C815
Graver Tank & Mfg. Corp D198
Permutit Co D201
Puro Filter Corporation of America D202
Roberts Filter Mfg. Co D204
Scaife, Wm. B., & Sons Co D203

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See Ornamental Metal Work; Leadwork—Decorative; Terra Cotta; Stone; etc.

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Alarm Systems—Electric
A.D.T. D704
Aero D704
American District Telegraph Co D704
Auth Electric Specialty Co., Inc D703
Autocall Co D710
Faraday D728
Holtzer-Cabot Electric Co D714
International Time Recording Co., Div. of International Business Machines Corp D748
Signal Engineering & Mfg. Co D726
Standard Electric Time Co D750
Stanley & Patterson, Inc D728
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Alarm Systems—Electric—Power Supply for
See Lighting and Power Systems—Electric

Doors
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Escapes—Spiral
Haslett Chute and Conveyor Co A761
Logan Co A762
Standard Conveyor Co C898
Specifications A762

Escapes—Standard
Logan Co A844
Smith, F. P., Wire and Iron Works A854
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Escapes—Straight Slide
Haslett Chute and Conveyor Co A761

Escapes—Tubular
Lawrence Mfg. Co A764
Logan Co A844

Exit Devices
Von Duprin C430
Vonnegut Hardware Co C430
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Extinguishers
Allen, W. D., Mfg. Co D220
Elkhart Brass Mfg. Co D207
First Aid D220
Josico D224
Reddy D220
Simmons, John, Co D224
Specifications D224

Extinguishing Apparatus
Allen, W. D., Mfg. Co D220
Elkhart Brass Mfg. Co D207
Simmons, John, Co D224
Specifications D207

Hose
Allen, W. D., Mfg. Co D220
Elkhart Brass Mfg. Co D207
Flax Line D220
Flax Tow D220
Simmons, John, Co D224
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Hose Cabinets
Alenco D220
Allen, W. D., Mfg. Co D220
Elkhart Brass Mfg. Co D207
Hoosier D207
Nella D220
Simmons, John, Co D224
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Specifications D220; D224

Hose Nozzles
Allen, W. D., Mfg. Co D220
Elkhart Brass Mfg. Co D207
Simmons, John, Co D224

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Prevention Systems
Fire Protection Co D219
Grinnell Co., Inc D226

Rack and Reels
Alenco D220
Allen, W. D., Mfg. Co D220
Bowes D220
Elkhart Brass Mfg. Co D207
Josico D224
Simmons, John, Co D224
Specifications D224

Resistant Treatment of Lumber
American Lumber & Treating Corp B399
Protexol Corp B403
Wolman Salts B399

Resisting Wood Doors
See Doors—Veneered—Flush and Paneled—of Fire Resisting Wood

Siamese Hose Connections
Allen, W. D., Mfg. Co D220
Elkhart Brass Mfg. Co D207
Simmons, John, Co D224
Specifications D220; D224

Sprinkler System Supervision
A.D.T. D704
American District Telegraph Co D704
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Specifications D704

Valves
See Valves—Hose

Fireplace

Accessories—Andirons, Screens, Grates, etc.
Chamberlin Metal Weather Strip Co., Inc C651
Nu-Stile C651
See also page A834

Air Heaters
Bennett Fireplace Corp A782
Heatilator Co A784

Ash Dumps
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Dampers
Covert, H. W., Co A779
Improved A779
Majestic Co A756
Old Style A779
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Grates
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Grates—Electric
See Heaters—Air, Electric—Fireplace or Mantel

Smoke Chambers
Covert, H. W., Co A779

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Conduit—Electrical
Cenlaco D601
Central Black D601
Central Tube Co D601
Central White D601
Central Whitenred D601
Electro Galvite D604
Enamelite D604
Fretz-Moon Tube Co., Inc D604
G-E D612
General Electric Co D612
Hot Dipped Galvite D604
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Allen, W. D., Mfg. Co. D220
Elkhart Brass Mfg. Co D207
Simmons, John, Co D224

Pipe—Acid Resistant
Duriron Co., Inc D144
Knight, Maurice A D152
Knight-Ware D152
U. S. Stoneware Co D143

Pipe—Ammonia
See Refrigerating and Ice Making Machinery and Plants

Pipe—Cast Iron, Malleable Iron—Cast Steel
Cop-R-Loy D112
Reading Iron Co D104
Wheeling Steel Corp D112

Pipe—Heating System
Thermoflex D353
Webster, Warren, & Co D387
Specifications D387

Pipe—Wrought Iron
Cohoes Rolling Mill Co D103

Pipe Railing
Vulcan Rail & Construction Co A758

Pipe or Tubing—Compression, Flared, etc.
Chase Brass & Copper Co D115
Conklin, T. E., Brass & Copper Co., Inc D114
Hays Mfg. Co D122
Innerseal D119
Mueller Brass Co D123
Parker Appliance Co D119
Streamline D123
Wolverine Tube Co D142
Specifications D123

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Sweat Bath
Chase Brass & Copper Co D115

Toilet Partition—Marble, Slate, etc.
Flush-Metal Partition Corp C521
Weis, Henry, Mfg. Co., Inc C533

Water Closet Tank
See Closet Tank Fittings

Flag Poles

Bases
(See also Ornamental Metal Work)
Babcock-Davis Corp A800
Lingo, John E., & Sons, Inc A804
Pole and Tube Works, Inc A814
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Fixtures for
Including: Halyard Tops for Wood or Steel Poles, Cleats, Braces, etc.
American Mast & Spar Corp A799
Babcock-Davis Corp A800
B-D A800
Lingo, John E., & Sons, Inc A804
Pole and Tube Works, Inc A814
Poletube A814
See also page A834

Metal
American Mast & Spar Corp A799
Entasis-tapered A814
Pole and Tube Works, Inc A814
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Steel
Babcock-Davis Corp A800
Conetaper A814
Easy Access A800
Entasis-tapered A814
Lingo, John E., & Sons, Inc A804
Pole and Tube Works, Inc A814
Traffic & Street Sign Co A820
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Specifications A800; A804

Wood
American Mast & Spar Corp A799

Flagging

Bluestone—Sawed
Ambluco Non-Slip C135
American Blue Stone Co A371; C135
Genesee Valley A371
Specifications A371; C135

Ceramic
Acme Brick Co B820
American Encaustic Tiling Co., Ltd B818
Associated Tile Mfrs B816
Bradford Reds B823
Cla-Slab B822
Hanley Co B823
Hood, B. Mifflin, Co B822
Kil-Kraft A574; B822
Ludowici-Celadon Co A576
Murray Tile Co A575
Murtico A575
Quaramics B822
Ryltyle B820
Vitrafloor B823

Granite
Eastern Quarries, Inc A350
Plymouth Quarries Incorporated A361

Marble
Appalachian Marble Co., Inc A372

Quartzite
Crab Orchard Stone Co A369
Robinson Flagstones C134

Sandstone
American Blue Stone Co A371
Naturcleft A371
Robinson Flagstones C134
Scioto A366
Taylor Stone Co A366

Slate
(See also Flooring—Slate)
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Flintkote Corp A248
Industrial C156
Ironhide C207
King, E. & F., & Co., Inc C171
KrodeProof A263
Kromate C164
Kromik C183
Lewis Asphalt Engineering Corp A263
Merco C173
Merkin, M. J., Paint Co., Inc C173
Metalastic C183
National Lead Co C176
Olo C178
Pittsburgh Plate Glass Co C207
R.I.W. A297
Rustnaught A246
Sherwin-Williams Co C183
Sleight Bituminous Products Co C182
Sun-Proof C207
Three Point C182
Toch Brothers Inc A297
Tockolith A297
Trimal C173
Triple Leadkote C171
Truscon Laboratories C198
See also pages A151; A247; A294; A556; A614
Specifications C148; C149; C156; C164; C171; C183; C198; C207

Mill White

Alba-Lux C207
Aquabar Waterproofing Products, Inc A240
Barreled Sunlight C200
Britelite C173
Cemcoat A294
Certain-teed Products Corp C152
Dairy C182
Du-Lite C164
du Pont de Nemours, E. I., & Co., Inc C164
Eg-Shel C183
Hampden Sunray C171
King, E. & F., & Co., Inc C171
Merco C173
Merkin, M. J., Paint Co., Inc C173
O'Brien Varnish Co C175
Pittsburgh Plate Glass Co C207
Save-Lite C183
Sherwin-Williams Co C183
Sleight Bituminous Products Co C182
Snolite C207
Sonneborn, L., Sons, Inc A294
Truscon Laboratories C198
U. S. Gutta Percha Paint Co C200
Wall-Lite C198
Wal-Wite A240
See also page A149
Specifications C152; C164; C183; C198; C200; C207

Oil Resistant

See Paint—Acid, Alkali or Oil Resistant

Pigments

Eagle-Picher Lead Co C168

Plastic

See Paint—Texturing

Porch

See Paint—House—Ready Mixed

Portland Cement

Artstone Products, Inc B626
Brush-Koat B626
Hamlin Cement Products, Inc B625

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Paint—Cont.

Portland Cement—Cont.

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Master Builders Co A273
Mastertex A273
Medusa Portland Cement Co A140
Rocor C179
Roman Plastic Products Corp C179
Sleight Bituminous Products Co C182
Stoneite B626
Three Point C182
Specifications A273; C179

Priming—Galvanized Iron

Sherwin-Williams Co C183
Specifications C183

Priming—Plaster

See Sizing; Enamel Undercoats; Paint—Brick Cement, Concrete, etc.

Priming—Wood or Metal

See Paint—House—Ready Mixed; Enamel Undercoats; Paint—Metal Protective

Red Lead

Dixon, Joseph, Crucible Co C156
Dutch Boy C176
Eagle-Picher Lead Co C168
Industrial C156
National Lead Co C176
Specifications C156

Remover

Sherwin-Williams Co C183
Taxite C183

Roof

(See also Paint—Metal Protective)
Aquabar Waterproofing Products, Inc A240
Certain-teed Products Corp A566
Dixon, Joseph, Crucible Co C156
Flintkote Corp A248
Industrial C156
Ironhide C207
Pittsburgh Plate Glass Co C207
R.I.W. A297
Rub-on A614
Sherwin-Williams Co C183
SWP C183
Toch Brothers Inc A297
See also pages A151; A556; B888
Specifications C156; C183; C207

Shellac

Marvelac C183
Pitcairn C207
Pittsburgh Plate Glass Co C207
Sherwin-Williams Co C183
Specifications C183

Sizing

See Sizing; Enamel Undercoats; Paint, Brick, Cement, Concrete, etc.

Stack and Boiler

Aquabar Waterproofing Products, Inc A240
Dixon, Joseph, Crucible Co C156
Industrial C156
R.I.W. A297
Salamander C183
Sherwin-Williams Co C183
Sleight Bituminous Products Co C182
Three Point C182
Toch Brothers Inc A297
See also pages A247; A556; A614; C198
Specifications C156; C183

Structural Steel

See Paint, Metal Protective; Preservatives—Metal

Technical

Dixon, Joseph, Crucible Co C156
Industrial C156
R.I.W. A297
Sleight Bituminous Products Co C182
Sulco A296
Three Point C182
Toch Brothers Inc A297
Truscon Laboratories C198
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Specifications C156

Paint—Cont.

Texturing

Art-Cote A296
Artstone Products, Inc B626
Craftex Co C154
Duralith Corp C203
Eagle-Picher Lead Co C168
Gold Bond B501
Hamlin Cement Products, Inc B625
Hi-Tex C204
Karnak A263
Lewis Asphalt Engineering Corp A263
Merco C173
Merkin, M. J., Paint Co., Inc C173
Mertex C173
Muralo Co., Inc C204
Mural-Tex C204
Pittsburgh Plate Glass Co C207
Plastic Velumina C207
Roman Plastic Products Corp C179
Roman-Tex C179
Shadowall C154
Sherwin-Williams Co C183
Stip-El-Art A294
Sulco A296
Sullivan Co A296
Ultratex B625
Velhide C207
Velumina C207
See also page B504
Specifications B626; C179; C207

Wall Finish—Flat, Egg Shell or Gloss

Alba-Lux C207
Albron C148
Alcoa C148
Aluminum Co. of America C148
Aquabar Waterproofing Products, Inc A240
Artone A246
Asepticote C198
Barreled Sunlight C200
Breer's C171
Cabot, Samuel, Inc C149
Certain-teed Products Corp C152
Craftex Co C154
du Pont de Nemours, E. I., & Co., Inc C164
Durawall C172
Eagle-Picher Lead Co C168
Flattine C197
Flat-Tone C183
King, E. & F., & Co., Inc C171
Klean-Kote C197
Lucas, John, & Co., Inc C172
Merco C173
Mercotone C173
Merkin, J. M., Paint Co., Inc C173
Mullers C182
Muralo Co., Inc C204
National Lead Co C176
Pittsburgh Plate Glass Co C207
Rice's Flow-On C200
Rocorlite C179
Roman Plastic Products Corp C179
Save-Lite C183
Sherwin-Williams Co C183
Sleight Bituminous Products Co C182
Standard Varnish Works C197
Sunflex C154
Sun-Glo C207
S. V. W. C197
SWP C183
Tru-Flo C198
Truscon Laboratories C198
U. S. Gutta Percha Paint Co C200
Wal-Finish A240
Wallhide C207
Wonder Koat C197
Specifications C149; C164; C171; C172; C179; C183; C197; C198; C200; C207

Washable Wall Finish

See Paint—Wall Finish—Flat, Egg Shell or Gloss

Water

Aquabar Waterproofing Products, Inc A240
Aquatint A240
Artstone Products, Inc. B626
Brush-Koat B626
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Paint—Cont.

Water—Cont.

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Calcimo C204
Cal-o-tint C204
Craftex Co C154
Decotint C183
Duralith Corp C203
Duratint C203
Dutch Kalsomine C204
Hamlin Cement Products, Inc B625
Indeliblo C204
Kalkomo C207
King's C204
Master Builders Co A273
Mastertex A273
Merco C173
Merkin, M. J., Paint Co., Inc C173
Mertex C173
Muralo Co., Inc C204
Pittsburgh Plate Glass Co C207
Rocor C179
Rocorlite C179
Roman Plastic Products Corp C179
Roman-Tex C179
Shadowall C154
Sherwin-Williams Co C183
Stoneite B626
Sulco A296
Sunflex C154
Suntone C204
Tex-Tints C179
Ultratex B625
See also page C152
Specifications A273; C179; C207

Water—Portland Cement

See Paint—Portland Cement

Waterproofing

See Waterproofing—Paint and Compounds

White Lead

Dutch Boy C176
Eagle-Picher Lead Co C168
National Lead Co C176
ODP C183
Sherwin-Williams Co C183
Zilo C183

X-Ray Protective

Bar-Ray Products, Inc B804
Specifications B804

Panelboards—Electric

Dead and Live Load

Bull Dog Electric Products Co D628
Fusenter D628
Nofuse D624
SaftoFuse D628
Superba D628
Unit-Versal D628
Westinghouse Electric & Mfg. Co D624
See also page D714

Laboratory

Standard Electric Time Co D750
See also page D714

Paneling

Wood

See Cabinet Work; Millwork

Panels

Access

See Doors—Access

Asbestos

Asbestos Limited Inc C102
J-M B931
Johns-Manville B931
Newmarble C102
Specifications B931

Door—Ventilating

See Ventilators—Door Panel, Transom, etc.

Fiber

See Wall Board—Fiber

Fiber—Asbestos Veneered

United States Gypsum Co B723

Panels—Cont.

Glass
See Glass — Structural; Glassware — Sculptured—Hand Wrought

Gypsum—Veneered—Wood
Sheetrock-Panelwood B507
United States Gypsum Co B507

Laboratory—Experimental
International Time Recording Co., Div. of International Business Machines Corp D748

Metal Surfaced
Armorply B461
Metalface B431
Met-L-Wood Corp B684
Roddis Lumber and Veneer Co B431

Phenolic Fiber
Duralite B431
Formica Insulation Co C106
Micarta C112
Roddis Lumber and Veneer Co B431
Westinghouse Electric & Mfg. Co C112

Phenolic Fiber—Veneered Plywood
United States Plywood Co., Inc B461
Weldwood B461

Plywood
See Plywood

Rubber
See Tile—Rubber—Floor

Veneer—Cloth Backed
See Coverings—Wall—Cloth Backed Wood Veneer

Veneered—Gypsum
Farley & Loetscher Mfg. Co B417
Farlite B417
Sheetrock-Panelwood B507
United States Gypsum Co B507

Veneered—Phenolic Fiber
Micarta C112
Westinghouse Electric & Mfg. Co C112

Veneered—Wood
Roddis Lumber and Veneer Co B431
United States Plywood Co., Inc B461
Specifications B431

X-Ray Protective
Bar-Ray Products, Inc B804
Specifications B804

Panic Exit Devices

Locks
Von Duprin C430
Vonnegut Hardware Co C430
See also page C326

Pans

Bunker
See Bunker Pans

Pantry

Cabinets
See Cabinets

Sinks
See Sinks

Paper

Building
American B496
Bird & Son, inc B496
Certain-teed Products Corp A566
Cordex B587
Double-Kraft A599
Economy B496
Neponset B496
Pittsburgh Steel Co B587
Ruberoid Co A599
Safe-n-Dry A599
Sealfast B413
"7-Ply" A599
Sisalkraft Co B497
See also pages A557; A596; B408; B888; C155
Specifications B496

Building—for Protection During Construction
See Flooring—Cement and Terrazzo—Curing and Protection

Paper—Cont.

Toilet
A. P. W. Paper Co D346
Onliwon D346

Toilet—Holders for
See Bathroom Accessories

Towel Holders
See Bathroom Accessories

Towels
A. P. W. Paper Co D346
Onliwon D346

Partition

Systems
American Clip-On Corp B602
Clip-On B602
Olsen System, Inc B601
Pittsburgh Steel Co B587
Simplex Steel Products Co B606
Standard X B507
Steeltex B587
Thermax Corp B705
U.S.G. B507
U.S.G. Resilient Plastering System B507
United States Gypsum Co B507
Specifications B507; B587; B606; B705

Partitions

Bank and Office Cage
Acorn Wire and Iron Works A790
Art Metal Construction Co A827; C436
Cincinnati Mfg. Co A832
Clear-Vision Counters, Inc C438
Friendly C438
Garcy C439
Garden City Plating & Mfg. Co C439
Hauserman, E. F., Co C487
Illinois Bronze & Iron Works A840
Jamestown Metal Equipment Co C441
John Poole C438
Kentucky Metal Products Co A798
Kmpco A798
Watkins, Ralph, Wrought Iron and Bronze Co A857
Watson Mfg. Co., Inc C443
Williams, Jno., Inc A860
See also pages A836; A842; A845; A849; A854; A856; C556
Specifications A790

Cubicle—for Hospitals and Institutions
American Steel Furniture Co C567
Day's C568
Ferrometal C528
Flush-Metal Partition Corp C521
Hart & Hutchinson Co., Div. of The Hart, Cooley, Highton Co C524
Judd, H. L., Co., Inc C568
Mills Co C507
Millsmetal C507
Milwaukee Stamping Co C528
Panelmetal C521
Super-steeL C567
Veneer-Steel C524
Weis, Henry, Mfg. Co., Inc C533
WeiSteel C533
See also page C487
Specifications C524; C528; C533

Dressing Room
See Partitions—Toilet, Shower or Urinal

Dressing Room—Combined with Shower Cabinets
Weis, Henry, Mfg. Co., Inc D282
WeisAlloy D282
WeiSteel D282

Folding—Fabric Covered
Drapefold C549
Flutefold C549
Fol-Dec C548
FoldeR-Way C558
Folding Products Corp C548
Horn Folding Partition Co C550
Nordell Ltd C549
Richards-Wilcox Mfg. Co C558
Selfold C550
Specifications C550

Partitions—Cont.

Folding—Fabric Covered—Sound Retardant
FoldeR-Way C558
Horn Folding Partition Co C550
Multifold C562
Richards-Wilcox Mfg. Co C558
Wilson, J. G., Corp C562

Folding—Metal Covered
FoldeR-Way C558
Richards-Wilcox Mfg. Co C558

Folding—Metal Covered—Sound Retarding
Horn Folding Partition Co C550

Folding—Wood
(See also Hangers—Door—Accordion Folding Partition; Hangers—Door—Sliding Folding Partition)
Circle A C556
FoldeR-Way C558
Horn Folding Partition Co C550
Newcastle Products, Inc C556
Pairfold C556
Quietfold C556
Richards-Wilcox Mfg. Co C558
Sectionfold C562
Selfold C550
Standardfold C556
Swedish Venetian Blind Co C561
Wilson, J. G., Corp C562; C790
See also pages B144; B414; C386; C544
Specifications C550; C562; C790

Folding, Wood—Sound Retarding
Circle A C556
FoldeR-Way C558
Hamlin, Irving B792
Hamlinized B792
Horn Folding Partition Co C550
Newcastle Products, Inc C556
Pairfold C556
Quietfold C556
Richards-Wilcox Mfg. Co C558
Selfold C550
Standardfold C556
Specifications C550

Hollow Metal
Art Metal Construction Co C436; C480
Dahlstrom Metallic Door Co B107
Hauserman, E. F., Co C487
Jamestown Metal Equipment Co C441
Junior C487
MasterWall C487
Snead & Co C484
U.M.P. B138
United Metal Products Co B138
See also pages A833; B103; B121; B143
Specifications C480; C487

Hospital Ward
See Partitions—Cubicle—for Hospitals and Institutions

Interchangeable Adjustable—Metal
All-Metal Partition Co. Inc C482
Art Metal Construction Co C436; C480
Dahlstrom Metallic Door Co B107; C483
Hauserman, E. F., Co C487
Junior C487
MasterWall C487
Mills Co C507
Millsmetal C507
Sanymetal Products Co C542
Snead & Co C484
Syncrofit C507
Takapart Products Co C486
U.M.P. B138
United Metal Products Co B138
See also page B103
Specifications C487; C507

Interchangeable Adjustable—Wood
Circle A C556
Newcastle Products, Inc C556
Takapart Products Co C486

Interchangeable—Open Mesh
See Partitions—Open Mesh

Jail
See Jail Construction and Equipment

Ladder Studded
See page A175

Partitions—Cont.

Metal Covered
Philipp Mfg. Co B150
See also pages A699; B145; B149

Metal—Rolled or Pressed
All-Metal Partition Co. Inc C482
Globe-Wernicke Co C440
Hauserman, E. F., Co C487
Junior C487
MasterWall C487
Mills Co C507
Millsmetal C507
Syncrofit C507
Watson Mfg. Co., Inc C443
Specifications C487

Open Mesh
Acorn Wire and Iron Works A790
Consolidated Expanded Metal Cos A794
Cyclone Fence Co C924
Garcy C439
Kentucky Metal Products Co A798
Kmpco A798
Logan Co A844
Steelcrete A794
See also pages A828; A832; A834; A860; B854; C920; C922; C926

Rolling Wood
Acme Partition Co., Inc C544
Circle E C556
Kinnear Mfg. Co B201
Newcastle Products, Inc C556
Sectionfold C562
Swedish Venetian Blind Co C561
Wilson, J. G., Corp C562
See also page C417
Specifications C544

Sound Retardant
See Specific Type of Partition

Tile
See Tile—Hollow—Gypsum; Tile—Hollow—Clay or Terra Cotta; Tile—Hollow or Solid—Cinder Concrete

Toilet, Shower or Urinal—Art Marble
(See also Terrazzo—Precast)
Marbleithic Co A365

Toilet, Shower or Urinal—Metal
American Steel Furniture Co C519
Bradley Washfountain Co D301
Ebco C520
Ebinger, D. A., Sanitary Mfg. Co C520
Ferrometal C528
Fiat Metal Mfg. Co C522
Flush-Metal Partition Corp C521
Hart & Hutchinson Co., Div. of The Hart, Cooley, Highton Co C524
Marblmetal C507
Mills Co C507
Millsmetal C507
Milwaukee Stamping Co C528
Panelmetal C521
Sanymetal Products Co C542
Silentsteel C520
Sturdibilt C520
Super-steeL C519
Veneer-Steel C524
Weis, Henry, Mfg. Co., Inc C533
WeisAlloy C533
WeiSteel C533
Specifications C522; C524; C528; C533; C542

Toilet, Shower or Urinal—Slate
Pyramid C125
Structural Slate Co C125
See also page C130

Toilet, Shower or Urinal—Structural Glass
Carrara C207
Pittsburgh Plate Glass Co C207
S. M. Shower Door Co. Inc D281
Vitrolite Co C131
Specifications C207

Vertical Sliding—Electrically Operated
Allen-Drew Co., Div. of Babcock-Davis Corp C546
Horn Folding Partition Co C550
Vertislide C550
Specifications C550

Partitions—Cont.

Wall Board and Steel Stud
(See also Wall Board)
- Olsen System, Inc. B601
- *Pronto* B506
- Ryber Mfg. Co B506
- Specifications B506

Wire
See Partitions—Open Mesh

X-Ray Protective
- Ray Proof Corp B806
- Specifications B806

Paste

For Office, School, Home, etc.
- *Old Faithful* C141

Pavements

Asphalt Block
See Blocks—Asphalt—Flooring

Rubber Block
See Blocks—Paving—Rubber

Wood Block
See Blocks—Wood—Flooring and Paving

Paving Asphalt
See Block—Asphalt—Flooring

Pedestals

Flag Pole
See Flag Poles—Bases; Ornamental Metal Work

Peelers

Vegetable
See Kitchen—Vegetable Peelers

Pencil

Lead
- *Old Faithful* C141

Pens

Live Stock
(See also Barn Equipment)
- Louden Machinery Co C899

Penstocks

Steel
See page D206

Perforated Metal

Concrete Reinforcement
- Consolidated Expanded Metal Cos A157
- *Hy-rib* B313
- Ryerson, Joseph T., & Son, Inc A170
- *Ryex* A170
- *Self-Sentering* B313
- *Steelcrete* A157
- Truscon Steel Co B313
- *Trussit* B313

Grilles
(See also Grilles and Screens—Metal Ventilating; Registers—Heating and Ventilating)
- Auer Register Co D470
- Best Register Co D472
- Diamond Mfg. Co D474
- *H & C* D475
- Harrington & King Perforating Co D476
- Hart & Cooley Mfg. Co D475
- Hendrick Mfg. Co D482
- *Highton-H & C* D478
- Highton, Wm., & Sons, Div. of The Hart, Cooley, Highton Co D478
- *Hitoncast* D478
- Independent Register & Mfg. Co D483
- Mueller, L. J., Furnace Co D492
- Tuttle & Bailey Mfg. Co D486
- Wickwire Spencer Steel Co D488

Lath
- *Arch Lath* B599
- Atlantic Gypsum Products Co., Inc B613
- *Big-Mesh* B551
- *Bos-Rib* B538

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Perforated Metal—Cont.

Lath—Cont.
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- *Bostwick* B507
- Bostwick Steel Lath Co B538
- *Ceco* A155
- *Channelform* B538
- Concrete Steel Co A156
- *Durabond* B550
- *Havemeyer* A156
- *Kuehn's Specialmesh* B551
- *Meshtex* B550
- Milcor Steel Co B551
- *Netmesh* B551
- *Niles* B538
- *Penco* B550
- Penn Metal Co B550
- *Red Top* B507
- Republic Steel Corporation A628
- *Rockwall* B613
- Ryerson, Joseph T., & Son, Inc A170
- *Ryex* A170
- *Smalmesh* B551
- *Super-Bostwick* B538
- *TiLath* B551
- *Toncan* A628
- *Truss-Loop* B538
- United States Gypsum Co B507
- Wheeling Corrugating Co B599
- See also page B504
- Specifications B507; B613

Phenolic Fiber

Panels
See Panels—Phenolic Fiber; Panels—Phenolic Fiber—Veneered Plywood; Panels—Veneered—Phenolic Fiber

Picture

Mouldings
See Mouldings—Picture

Pilasters

Marble, Metal, Wood, etc.
See Columns

Pilers

Boxes, Barrels, etc.
See Elevators—Portable

Piles

Composite—Wood and Concrete
- MacArthur Concrete Pile Corp A104
- Raymond Concrete Pile Co A106
- Western Foundation Co A110
- Specifications A104

Concrete
Including: Premoulded, Cast-in-Place Pedestal, Steel Incased, Steel Cylinders and Tubes
- MacArthur Concrete Pile Corp A104
- *Pretest* A108
- Raymond Concrete Pile Co A106
- Spencer White & Prentis, Inc A108
- Western Foundation Co A110
- Specifications A104

Sheet Steel
- *J&L* A160; A716; A767; D106
- Ryerson, Joseph T., & Son, Inc A170

Wood
(See also Lumber—Creosoted or Treated)
- Western Foundation Co A110

Pine

Flooring
See Flooring—Wood—Pine

Lumber
See Lumber—Pine

Pipe

Benders
See Cutters and Benders—Pipe and Tubing

Bends
See pages D184; D190

Pipe—Cont.

Brass or Copper
Admiralty D117
Alpha D117
American Brass Co D113
Anaconda D113
Chase Brass & Copper Co D115; D117
Conklin, T. E., Brass & Copper Co., Inc D114
Crescent D118
Foster Wheeler Corp D118
Innerseal D119
Mueller Brass Co D123
PR D137
Parker Appliance Co D119
Paul Revere D137
Revere Copper and Brass Inc D137
Streamline D123
Wolverine Tube Co D142
Specifications D117; D123; D137

Coils
See pages D142; D184; D190

Compression Fittings
See Fittings—Pipe or Tubing—Compression, Flared, etc.

Concrete—Reinforced
See page D161

Conductor—Copper
Chase Brass & Copper Co A620
Revere Copper and Brass Inc A629
Leadtex A629

Conductor—Copper—Lead Covered
Chase Brass & Copper Co A620
Revere Copper and Brass Inc A629
Leadtex A629

Conductor—Fasteners for
B.B. A618
Berger Bros. Co A618
Chase Brass & Copper Co A620
Fitrite A573
Hoyt A624
Levow, David A573
Specifications A573

Conductor—Fittings for
Chase Brass & Copper Co A620
Quaker City A618

Conductor—Lead
Hope's Windows, Inc B283
National Lead Co A624
Hoyt A624

Conductor—Shoes or Protectors for
See Shoes—Leader

Conductor—Steel
B. B A618
Cop-R-Loy B599
Gohi A626
Newport Rolling Mill Co., Inc A626
Republic Steel Corporation A628
Shurlock A618
Toncan A628
Wheeling Corrugating Co B599
See also page A618

Conductor—Tin or Terne Plate
Follansbee Brothers Co A622
Wheeling Corrugating Co B599

Coverings
Asbestocell B810
Asbesto-Sponge B810
Carey, Philip, Co B808
Carocel B808
Economy B810
General Insulating & Mfg. Co B742
Gimco B742
Gustin-Bacon Mfg. Co B743
Johns-Manville B810
Keystone B810
Savall B742
Sil-O-Cel B810
Superex B810
Super-Fire Felt B810
Vitribestos B810
See also page A599
Specifications B808; B810

Pipe—Cont.

Cutters
See Cutters and Benders—Pipe and Tubing

Drain—Acid Resistant
Duriron Co., Inc D144
Knight, Maurice A D152
Knight-Ware D152
U. S. Standard D143
U. S. Stoneware Co D143
Specifications D144

Drain—Packing for
See Packing—Drain Pipe

Drainage
San-Equip Inc D159

Fittings
See Fittings—Pipe or Tubing—Compression, Flared, etc.

Floor and Ceiling Plates
Beaton & Cadwell Mfg. Co D430
De Luxe D431
Perfection D430
Sexauer, J. A., Mfg. Co. Inc D431

Furnace
See Pipe—Conductor—Tin or Terne Plate

Joint Compounds
Hetzel Roofing Products Co A614

Joints—Expansion
Busch, G. Walton, & Sons, Inc D170
Foster Wheeler Corp D118
Fulton Sylphon Co. D356
Sylphon D356
Wainwright D118

Joints, Expansion—Acid Resistant
Duriron Co., Inc. D144

Nickel Silver
Anaconda D113

Railings
Illinois Bronze & Iron Works A840
Logan Co A844
Vulcan Rail & Construction Co A758
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Sleeves
See Sleeves—Pipe

Steel
Copper-Clude D110
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American Abrasive Metals Co A728
American Mason Safety Tread Co A734
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Browne B384
Campbell Metal Window Corp. B277
Crittall Manufacturing Co., Inc. B239
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Duo-Vent Window Co. B278
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INTERIOR STONE WORK

ASBESTOS LIMITED INC.

Manufacturers of "Newmarble"—Asbestos Panels Simulating Marble

8 West 40th Street, NEW YORK, N. Y.

WORKS: MILLINGTON, N. J., U. S. A.; LACHINE, CANADA; GENOA, ITALY

Product

"NEWMARBLE" ASBESTOS PANELS Simulating Marble. For "Newtile" Asbestos Tiling in sheet form, see Manufacturers' Index.

"Newmarble"

"Newmarble" is made from asbestos in panel form with a beautiful and lustrous finish that simulates marble. It is fire and water resisting; it is sanitary and easy to keep clean and it may be quickly installed by any carpenter. Its lovely, colorful surface; depth of finish; long life and surprising economy qualify it for the many purposes where the use of marble is indicated. Being light in weight, approximately 2 lbs. to the sq. ft., it may be used where real marble would not be desirable on account of weight and bulk.

Uses

Architects have found an almost unlimited field of adaptations for "Newmarble." A few of the classes of installations rapidly gaining favor are:

(1) Apartment house foyers. (2) Theatre lobbies. (3) Office building lobbies and hallways. (4) Hospitals. (5) Department stores.

Installations are also being made in restaurants, drug stores, barber shops, beauty parlors, bathrooms and kitchens.

It is being used on soda fountains, counter bases and display windows.

"Newmarble" is effective for the treatment of store front exteriors. Its durable and weather-resisting qualities make it excellent for this purpose and with proper care it will give satisfaction for years.

Colors

"Newmarble" is made in the following attractive colors:

Black and gold
Light Italian
French black and white
Verde antique (green)
Belgium black
Spanish rose
Chinese red
Plain white

How Furnished

"Newmarble" Standard Panels—Regularly furnished in panels, size 32x48 ins., $\frac{3}{16}$ in. thick.

"Newmarble" Trim—For effective results "Newmarble" trim should be used wherever trim is necessary. Striking and harmonious effects can be produced by the use of trim different in color from the wall panels.

Cap moulding and base are made in all "Newmarble" finishes, the standard stock widths being 4 and 6 ins., respectively. One edge rabbetted to receive the panels. Length 48 ins. Other widths up to 12 ins. can be procured on special order.

Method of Application of Panels and Trim

Cutting Panels—Standard sheets size 32x48 ins. should be used wherever practical, and where cutting is necessary the following methods are recommended:

Where an electric hand saw is available, this method of cutting is preferable over all others, substituting a thin carborundum wheel for the steel saw. If carborundum wheels are unobtainable we can furnish them at a nominal cost. It has been found that grades equivalent to Carborundum Redmanol 36C8T are best adapted to this work.

Sheets can be cut with a carpenter's saw or can be broken in a straight line by scoring deeply on both sides with a pointed instrument and laid over the edge of a table and broken in much the same manner that glass is cut. Edges can be made true by the use of a file or sandpaper, making sure, however, to use a block under the sandpaper if the latter method is used.

Mitering can be done by filing the edges of the sheet to the proper bevel.

Where rounded cuts are necessary the use of a compass saw is recommended, filing the edges after cutting. If a compass saw is not available the curve can be cut with a nail set, punching holes along the line to be cut and breaking the piece out, the rough edge can be smoothed with a file. A hacksaw blade with an improvised handle of electricians' tape is also very good for cutting curves.

"Newmarble" trim is best cut with a hacksaw.

Attaching Panels—"Newmarble" may be attached using any of the following methods. If requirements are not fully covered by these directions, our Service Department will be glad to give you additional information.



"Newmarble" Panels Are Easy to Handle







Three Typical Applications of "Newmarble"

With Wood Screws—*To wood studs and furring, using 1-in. No. 4 flat head screws:* Drill holes with E-I combination countersink and drill, and touch up the screwholes with the proper shade of putty.

Using oval head nickelplated screws: Allow the screwheads to show. Care should be exercised in placing the screws so as to present a well balanced appearance.

To masonry walls with screws and lead anchors or equivalent: First drill holes in the "Newmarble" sheets, then place the sheet in the position it is to occupy on the wall, and mark the location of the screw anchors on the wall. Drill holes suitable for anchors, with star drill, place the anchors in the holes, put sheet in position and screw fast to the wall.

With Nails—To wood studs, board walls and furring, using 4d finishing nails, drilling holes with No. 45 twist drill and carefully setting the nailhead. Touch up nailholes with proper shade of putty.

With Plastic Compound—To masonry walls with "Newmarble" Plastic Compound following the directions with the material. Temporary shoring to hold sheets in position should be used and not removed for at least 12 hours and preferably 24 hours.

Where "Newmarble" Plastic Compound is used on painted surfaces, it is important that the surface of the wall be scratched or scarred sufficiently to secure a good bond between the wall and the plastic compound.

Filling Joints and Touching Up—The best way to fill joints is to place a small quantity of "Newmarble" Joint Filler along the edge of the sheet in place, and then when fitting the next sheet, to fit it close and allow the joint filler to squeeze out. Remove the excess joint filler and clean the surface of the sheet *immediately* with naphtha or gasoline.

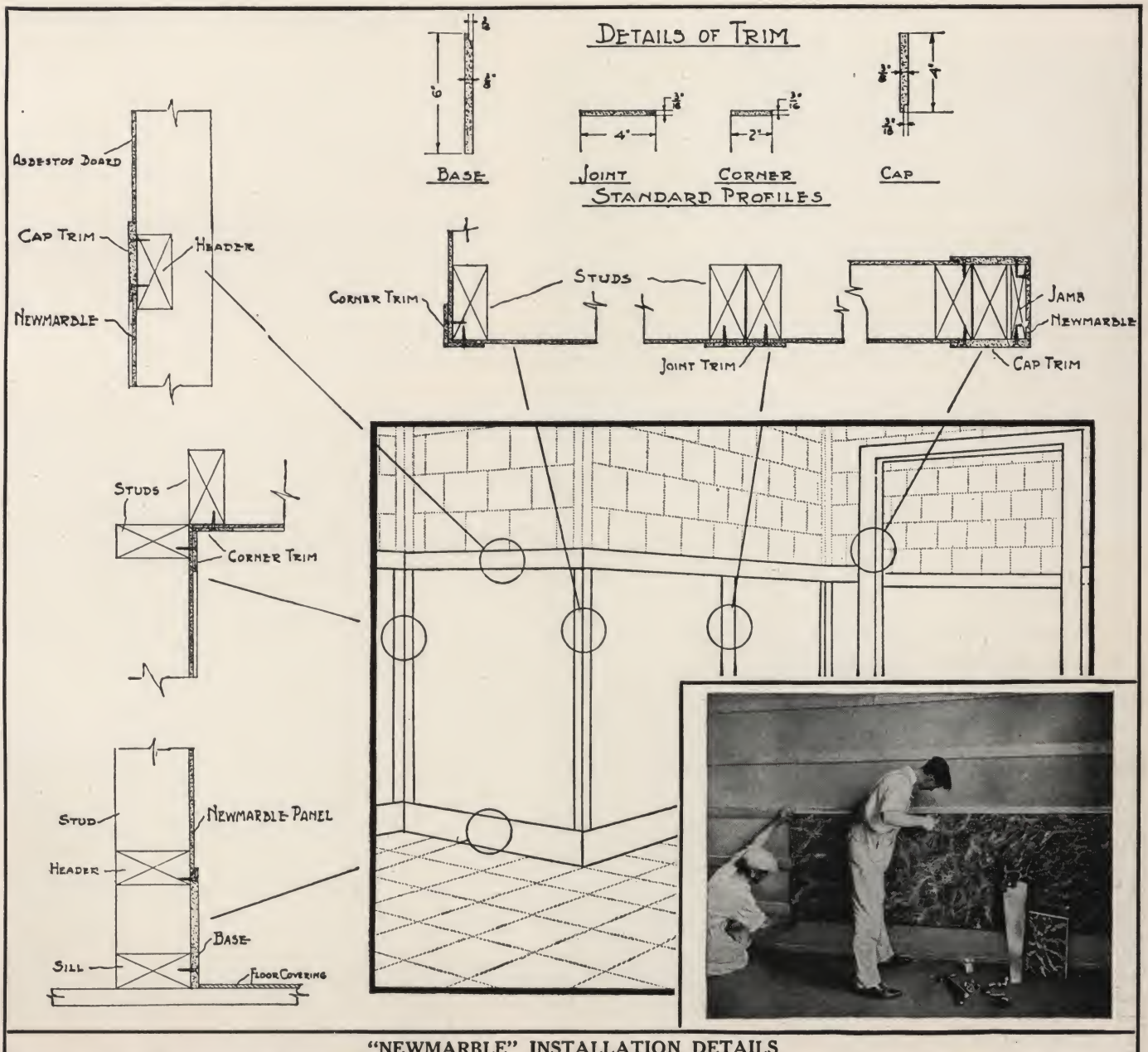
When it is not possible to use this method, crack filler can be inserted in the places to be touched up with the fingers, *and cleaning up as explained above.*

Use the same method to point up all nailholes and scars caused by erection.

Attaching Trim—"Newmarble" trim is to be used wherever necessary and any of the foregoing methods of attachment may be used.

Caution—It is important to have all surfaces, where "Newmarble" is to be attached, reasonably true before proceeding with the work of installing. Studs and framework should be so placed as to furnish support under each edge. Furring strips on masonry walls should be plumb and faced true.

Do not attempt to install "Newmarble" over wet plaster.



"NEWMARBLE" INSTALLATION DETAILS

G. BAGATTA

Artificial Marble, Scagliola, Travertine and Caen Stone

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We specialize in Churches, Banks, Theatres, Schools as well as all public buildings and private residences where fine architecture is the keynote.

Estimates cheerfully given for work from coast to coast. *No job too large or too small.*

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We employ skilled craftsmen of many years experience in executing work of a very high character.

Materials are imported so that work equal to the finest executed abroad can be reproduced.



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SCHULTZ & WEAVER, Architects

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McCrory Store, Toledo, Ohio
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Specialists in Artificial Stone and Marble for Interiors

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Realizing the demand for efficiency in construction today, we are fully prepared for your inquiries concerning all artificial stone and marbles for interiors, no matter how exacting. Architectural design is faithfully carried out in all detail, no matter how intricate. Advice is available, for the asking, on any artificial stone or marble problem.

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Specially trained men, familiar with perfection of detail, are employed at all times, under the guiding hand of expert supervisors.

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Our organization includes men technically and mechanically trained and their experience of twenty-five years in the building industries assure responsibility.

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Only the very best materials and color are used in the manufacture of our products, assuring our clients of durability and value.

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The design and construction problems pertaining to products such as ours are nowhere more efficiently handled.

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Quotations are available promptly and are cheerfully rendered for projects of any proportion throughout the country.

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A BARDEN-STORRIER product indicates quality of construction and permanence of installation.

Send us a sample of any stone or marble and we will guarantee to reproduce it, not as a mere imitation, but as an actual resemblance of the natural material.

References

Project and Location	*Architect*
The First National Bank Building, Milwaukee, Wis.	A. MOORMAN & Co.
Medina Athletic Club, Chicago, Ill.	W. W. AHLSCHLAGER
Minneapolis Theatre, Minneapolis, Minn.	A. F. GRAVEN
Netherlands Plaza Hotel, Cincinnati, Ohio	W. W. AHLSCHLAGER
Warner Bros. Theatre, Erie, Pa.	RAPP & RAPP
Riverside Zoo, Chicago, Ill.	EDWIN H. CLARK
Several F. W. Woolworth Stores, Chicago, Ill.	W. W. AHLSCHLAGER



Grill Room of the Netherlands Plaza Hotel, Cincinnati, Ohio. A Very Unique Installation of Sienna Travertine and Scagliola.
W. W. AHLSCHLAGER, Architect.

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The Product; the Company

FORMICA

FORMICA is a laminated material made with a fibre base and phenolic binder. The company, the largest in its field, was the first to adapt the material to building purposes and has the longest experience in manufacturing the material for such purposes.

The material has been used successfully by hundreds of architects in thousands of installations all over the country.

The Uses of the Material

Formica can be used for the same purposes as marble, structural glass, wood paneling and finish plaster coats.

Wainscot—Formica wainscot has been applied to bath rooms, kitchens and the walls of public buildings. For this purpose it is furnished in the form of a facing on both sides of hard board center 36″ x 84″ x 5/32″ or smaller. It is installed on walls by the use of cement as shown in the details E-E, F-F and G-G. It may also be installed with nails or screws where cover moldings are used that will conceal this method of attachment. Cap molding and basing of Formica in the same or contrasting colors are also available.

Store Front Bulkheads—For this purpose or for other walls and ceilings outdoors Formica is provided in the form of facing on both sides of asbestos sheet. This material is also used indoors where extreme moisture is to be encountered or a heavier material than the hard board center sheet is deemed advisable. These sheets may be cut to size at the factory or the branch factories in New York or Chicago, or by a portable carborundum cutter on the job. The material is attached to wood grounds on the wall by screws or with a special concealed fastening as shown in details A-A, B-B, C-C and D-D.

Window Stools—These are available in all the Formica colors. They are made by veneering 1/16 Formica sheet to ply wood or by gluing a molded channel of Formica over ply wood. They are fabricated to dimensions at the factory, require no finishing and are free of upkeep and refinishing expense. See detail for methods of installation.



Lobby of A. O. Smith Laboratory, Milwaukee, Designed By Holabird & Root with Formica Wall Panels



Formica Store Front As Used By a Chain Store



A Flush Door in Satin Black Formica



An Interesting Treatment of a Bath Room With Formica Wainscot


BLACK *and* GOLD


VERDI-ANTIQUE


BROWN MARBLE


No.2 DECORATED


No.3 DECORATED


No.6 DECORATED


No.7 DECORATED


No.8 DECORATED


No.9 DECORATED


No.10 DECORATED


MAPLE


LIGHT WALNUT

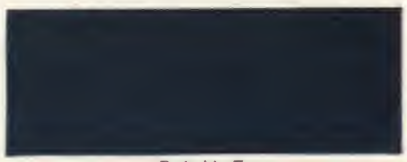

DARK WALNUT


MAHOGANY


STUMP WALNUT


OAK


ORANGE


BLUE


GREY


GREY-10


GREY-30


GREEN


GREEN-10


GREEN-20


B-101


B-102


B-103


B-104


B-105


RED MOROCCO



Formica Window Stool
Specified By Tietig & Lee
for a Residence
in Cincinnati



Interior of an Elevator Cab
with Formica Wall Covering



Department Store Elevator Lobby with Formica
on the Walls



Deal Plate and Work Desk Top of Form
in a Modern Bank

Basing and Mop Boards—These have been widely used on show cases in stores where constant mopping soon takes the finish off wood. They are available in the form of molded channels filled with wood in the same fashion that window stools are produced, or in some cases 1/8 sheet is screwed in place, or 1/16 sheet is glued to hard wood. They are also used on the walls of rooms, the bottoms of columns and for similar purposes. See detail E-E.

Table and Counter Tops—These are widely used for restaurant tables and counters. They are made by veneering 1/16 Formica on the top and edges of ply wood. They have also been used for smoking room tables on ships, in clubs and in lobbies and public rooms generally.

Panels, Pilasters—For counters Formica on hard board or Formica 1/16 sheet backed with sheet metal have been used. These panels are relatively inexpensive, handsome and of a finish that is easily cleaned and never requires refinishing.

Door Kick Plates and Push Plates—These plates are Formica sheet 3/32 or 1/8 thick with beveled edges and countersunk screw holes.

Flush Doors of Formica—In hospitals, where it is essential to have doors that are easily cleaned, flush doors of Formica consisting of ply wood encased on all sides with 1/16 Formica sheet have been used to excellent effect. These doors can be cleaned with antiseptics without injury. With white metal ha ware satin black Formica for this purpose provide very dignified, rich and interesting effect.

Formica Tops for Furniture—Formica tops dressers, end tables, coffee tables and similar pie are made at the furniture factory where 1/16 Form veneers are attached in the same manner that w veneers are used.

Kitchen Cabinet Tops—On tops for kitchen cabi butlers' dressers and so on Formica is supplied a veneer on wood where there is no sink or as a ver on asbestos sheet where there is a sink and a la amount of moisture is likely to be encountered. edges of the sink holes are covered with Form There is a back splash consisting of Formica on sh metal and a watertight joint between the cabinet and the back splash.

Elevator Cab Interiors—The material is not inju by moisture and the finish stands up to the hard w encountered in this use. Formica on metal or Form on hard board can be used. The latter is easily stalled and may be cut on the job.

Elevator Lobby Walls—The space about the vator buttons in the average elevator lobby is har keep clean. By covering the lobby walls with F mica or using a generous sized plate about the butt a surface is provided that is very readily cleaned that will not show finger marks.

Ornamental Signs—Handsome signs are produced by lettering Formica plates with gold and silver and where exactly the same sign is to be produced in quantity, the lettering can be done at the Formica factory by any one of three different processes.

Formica Trays and Bedside Table Tops—Molded Formica trays 14 x 18 and 9½ x 12 are available in any of the Formica colors. They are used in cafeterias and for room service in hotels. There is also a 16 x 20 and a 16⅛ x 20⅛ bedside table top for the standard tables used at bed sides in the private rooms of hospitals.

Fabrication and Distribution

The Formica Insulation Company has sales offices in seventeen leading centers and factory branches with material in stock and fabricating equipment in readiness in New York and Chicago. The material is sold through building material dealers. Formica in any form may be ordered cut to size within the limits of the standard sheets. We will fabricate the material to architects details for erection by others. We do not contract for installation.

Advantages of Formica

Formica is essentially a material to provide a decorative finish of great attractiveness and durability. It is almost inert chemically and is therefore not affected by any of the mild acids or alkalies associated with food or medicine. It is not affected by chemical reaction with fumes in the air. The surface will not lose its elasticity with time and craze and crack as will most other finishes. It will stand 300 degrees Fahrenheit of heat and therefore is difficult to burn with a lighted cigar or cigarette. It is harder than marble but softer than glass.

New Formica Colors

During the year Formica has perfected its Series "B" colors made with material which permits the production of light pastel tints of solid colors and have made possible a brown marble finish in which considerable white appears. These colors better adapt the material for use on kitchen and bathroom walls and other places where light colors are desired.

Formica is not injured by any ordinary organic solvent. It stands alcohol, benzol, acetone. Hot coffee pots or kettles containing boiling water will not injure it in any way. There are more than 30 colors which make possible a color scheme to meet any requirements.

The home office and the branch offices are ready to provide all necessary information regarding types of material, sizes, colors, prices and methods of installation.



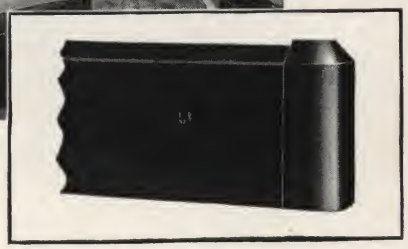
Formica Table Tops on Manicure Tables in a Department Store Beauty Shop



Formica Kitchen Cabinet Top in a Residence

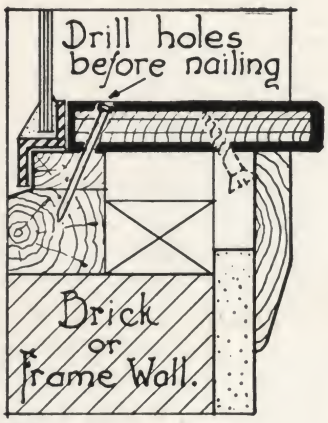


Formica Topped Tables in the Lounge of a Ship built at the Fore River Yards

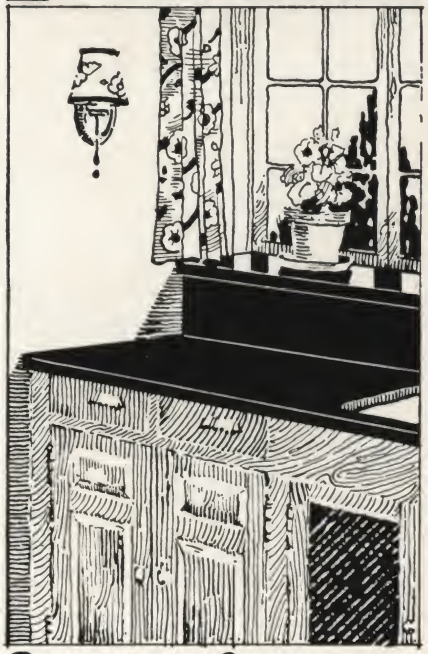


Formica Basing As Used for Show Cases, Columns and Rooms

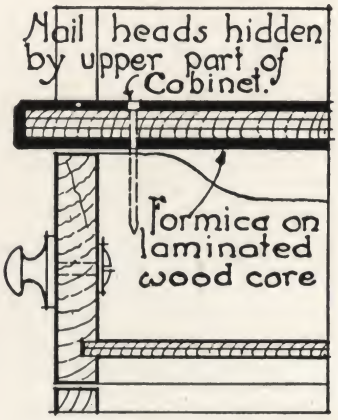
FORMICA



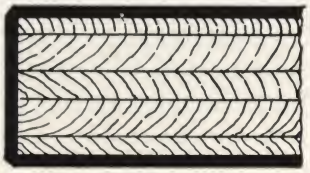
WINDOW STOOLS



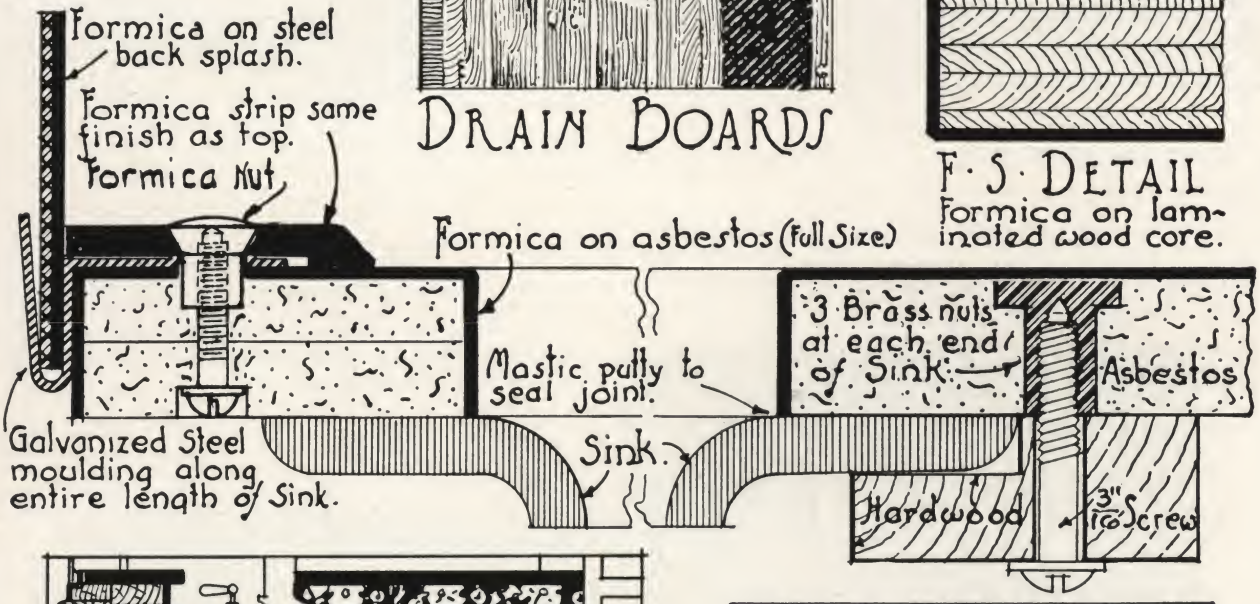
DRAIN BOARDS

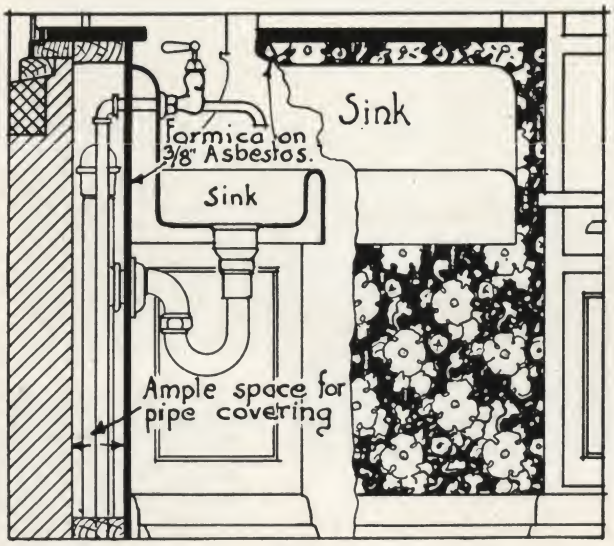


COUNTER TOPS



F·S·DETAIL
Formica on laminated wood core.

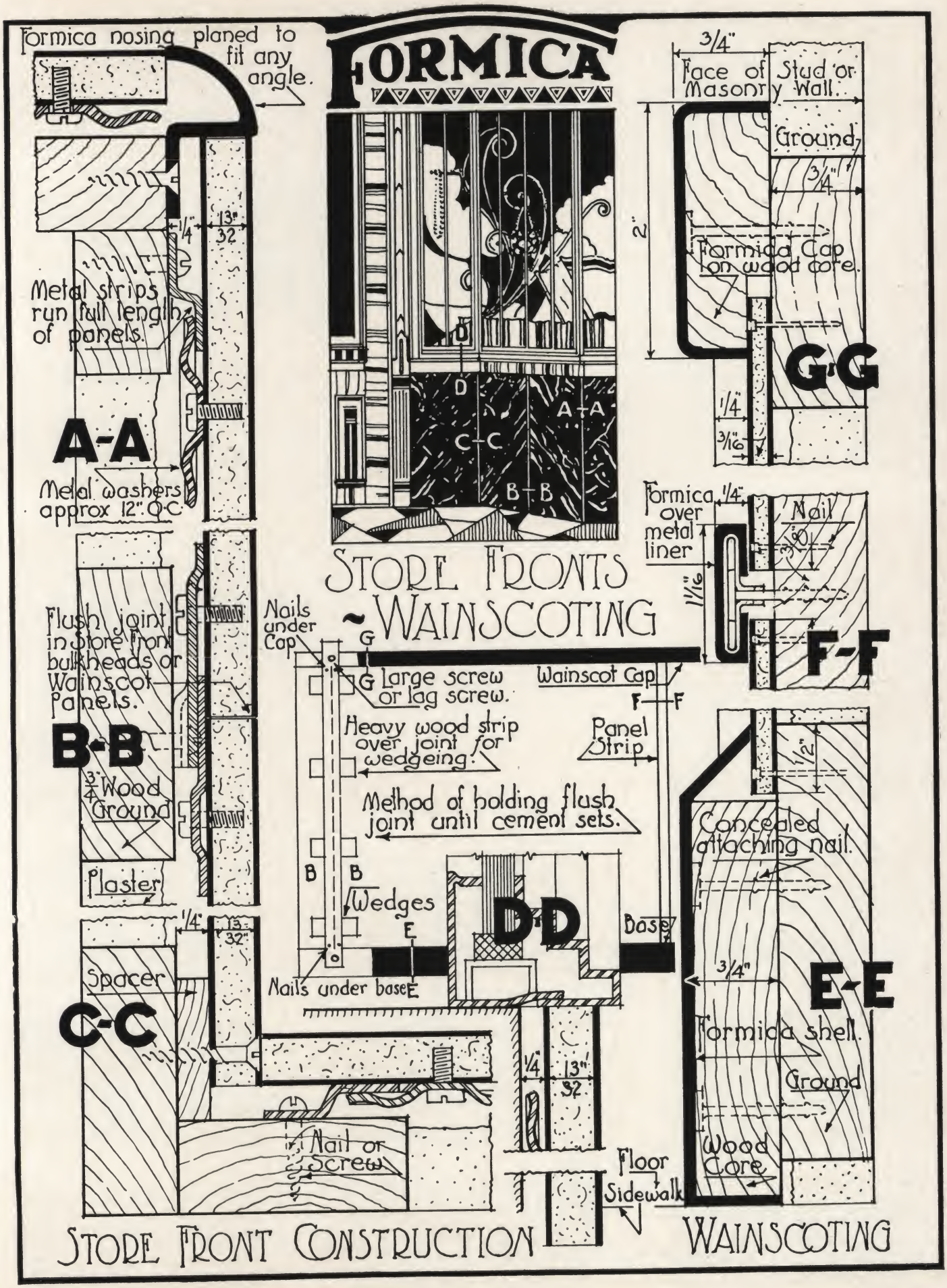




FURRING BEHIND SINK



DINING ALCOVES


FORMICA
Formica nosing planed to fit any angle.
Metal strips run full length of panels.
A-A
Metal washers approx 12" O.C.
Flush joint in store front bulkheads or Wainscot Panels.
B-B
3/4" Wood Ground
Plaster
Spacer
C-C
Nails under Cap
G
G Large screw or lag screw.
Heavy wood strip over joint for wedgeing.
Method of holding flush joint until cement sets.
B B Wedges
E
Nails under base
D-D
Base
Wainscot Cap
F F
Panel Strip
Nail or Screw
Floor
Sidewalk
STORE FRONTS ~ WAINSCOTING
STORE FRONT CONSTRUCTION
3/4" Face of Stud or Masonry Wall
Ground
3/4"
2"
Formica Cap on wood core.
G-G
1/4"
3/16"
Formica over metal liner
1/4"
Nail
1/16"
F-F
1/2"
Concealed attaching nail.
3/4"
E-E
Formica shell.
Ground
Wood Core
WAINSCOTING

WESTINGHOUSE ELECTRIC & MFG. CO.

EAST PITTSBURGH, PA.

For Branch Offices, see our Lighting Catalogue
For References to Other Products, see Index to Manufacturers

DECORATIVE MICARTA

Description

Decorative Micarta plate is a laminated, hot moulded material—dense, strong, and hard—specially developed for use as a decorative veneer or surface material. It supplies a finish that is extremely durable and will not easily scratch nor dent.

Not only will Micarta resist much mechanical abuse, but it is immune to most liquids, for example alcohol—a solvent for most paint and varnish finishes. Any disinfecting solution or cleaning compound without grit can be used in perfect safety.

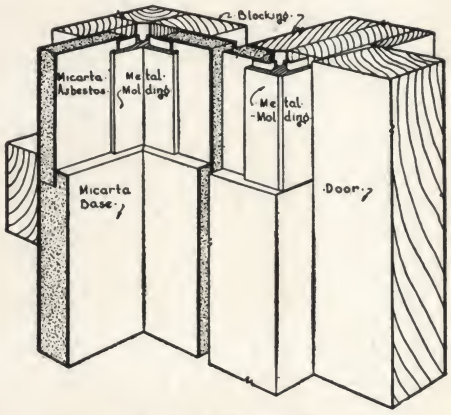
Micarta resists heat also, unless the temperature be extreme. A cigarette left to smolder on furniture topped with Micarta will not harm the finish. A partition of Micarta will retard the spreading of fire for a considerable period. For durable walls, attractive color schemes can be obtained either in plain colors, with some of the decorative patterns, or with special inlaid designs.

Applications

Micarta in buildings is excellent for paneling offices or making partitions, and for partitions in toilets. It can also be used to an excellent decorative advantage for store fronts.

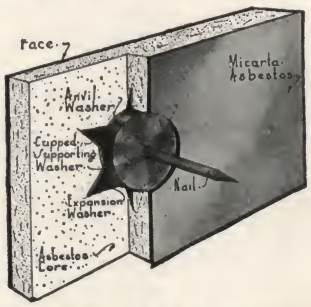
In hospitals, probably more than in any other field, is Micarta's immunity to alcohol and other disinfectants very important. Here Micarta is a protective as well as a decorative finish. Even though the surface covered with Micarta never is purposely disinfected, still the chance always exists for spilling or splashing these liquids upon dresser tops and walls.

In the home Micarta provides new beauty and a new standard of service in practically every room, but for walls in the bathroom and kitchen Micarta offers special advantages. These rooms have a moist steamy atmosphere that brings most wall finishes to an untimely end. Micarta retains its bright gleaming finish even under

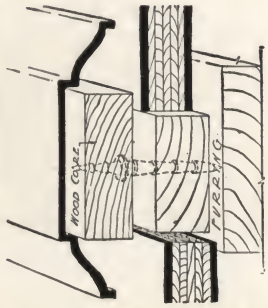


Corner Construction

such conditions, and best of all it can be wiped clean with just a soapy cloth. A few other places in the home



Concealed Nail with Expansion Star



Concealed Drive Nail

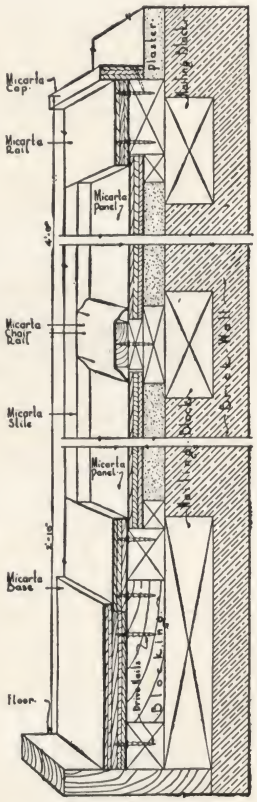
where Micarta serves admirably are the breakfast nook, kitchen furniture tops, dining table, window stools, etc.

For marine service, Micarta's resistance to fire and to moist salt air makes it a preferred finishing material. Wall paneling in stateroom, saloon, etc. is more durable when finished in Micarta.

Micarta panels are available in different core materials which indicate their more specific applications. Micarta celotex, Micarta plywood, Micarta asbestos, Micarta prestwood, and Micarta plymetal. These panels may be applied to the walls with special nails or in sheets glued to the walls with our improved glue. We recommend the panel treatment as the best. There are also a large number of finishing details—baseboards, window stools, caps, and chair legs, so that everything in the room will be in accord.

For veneer work $\frac{1}{16}$-inch material is recommended; however, thicker sheets can be furnished.

Standard sheets are 48x48 inches or 48x96 inches.



Typical Wainscot Construction

Patterns and Colors

The following pages show the patterns and colors now considered standard for Micarta. In addition to these, special designs can be supplied. Beautiful effects can be obtained with inlays either with harmonizing colors or with metals. Other colors than those shown can be furnished when the quantity involved is sufficient. All colors and patterns can be supplied either in a high gloss or hand rubbed finish.



826
Cubist



815
Small Flower



817
Tulip



821
Paisley Shawl



822
Carnation



823
Wild Red Rose



824
Japanese Garden



825
Woodland Flower



827
Horn



851
Wine Red (Munsell Scale R 3.5/16)



818
Crimson (Munsell Scale R 3/10)



855
Orange (Munsell Scale RYR 5/14)



854
Apricot (Munsell Scale RYR 6/10)



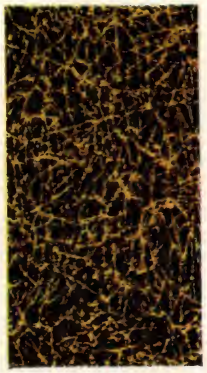
849
Yellow (Munsell Scale Y 8/12)



852
Light Green (Munsell Scale GYG 4/8)



832
Medium Green (Munsell Scale GYG 3/4



829
Gold Web



820
Deep Green (Munsell Scale G 2/2)



848
Blue (Munsell Scale PB 2/10)



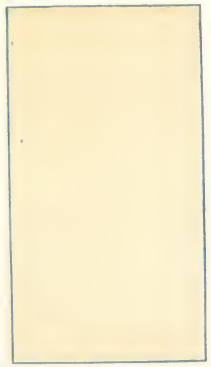
853
Purple (Munsell Scale PRP 2/6)



850
Straw (Munsell Scale YRY 7/8)



828
Brown (Munsell Scale YR 4/4)



856
White



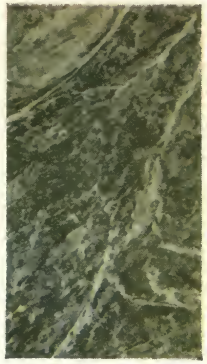
836
Black



859
Buff



834
Black and Gold



857
Verdi Antique



858
Cardiff Green



836
Belgian



845
Curly Maple



847
White Oak



836
Ebony



842 Mahogany Dark Red Crotch
844 Mahogany Dark Brown Crotch



801
Mahogany Dark Red Straight Grain



843
Mahogany Dark Brown Straight Grain



805
Walnut Dark Straight Grain



830
Walnut Light Straight Grain



835
Walnut Dark Semi-straight Grain



837
Walnut Light Semi-straight Grain



804
Walnut Dark Burl



838
Walnut Light Burl



831 Walnut Dark Center Matched
833 Walnut Light Center Matched

JOHN J. WISE AND CO. INC.

Artificial Marble—Scagliola—Travertine

TELEPHONE
ALgonquin 4-2699

428 East 13th Street
NEW YORK, N. Y.

Products

We manufacture and contract for the erection of Artificial Marbles, Scagliola, Precast Travertine and all kinds of Precast Imitation Stones for interiors. We are able to substitute, at a great saving, any imported or domestic marble and stone, in monumental buildings such as banks, churches, theatres, public and private buildings of distinction. (See illustration below.)

Precast Travertine

Suitable for walls, stair treads, floors, etc., all work to comply with Government specifications.

Precast Art Marble

In various colored marbles, suitable for wainscot, base, cove base, moulded caps, stair treads and risers, toilet enclosures, window stools, sills, radiator tops. We are also equipped to furnish all manner of ornamental work and decorative motifs.

Special designs with metal inlays, counters and tops, table tops, bulkheads for stores and exteriors.

Both Precast Travertine and Art Marble have the beauty and hardness of the natural marble, and both are moisture and fire-proof.

Service

We are in a position to execute and ship to all parts of the world any of the above material, and in addition will contract for the erection of any of the material supplied by us.

We will gladly furnish architectural or erecting advice to those wishing to erect the materials themselves. In most sections of the country the cost of erection on the above materials is about one-third less than the cost of natural stones or marbles.

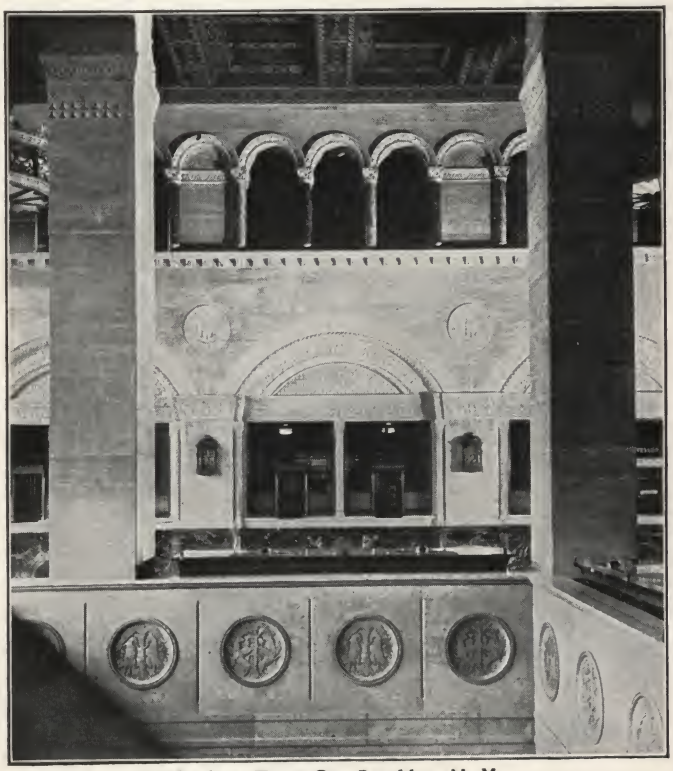
Co-operation

We welcome the opportunity to be of service to architects, contractors or owners in the matter of supplying their needs, giving information as to material best suited for the job in hand, or rendering samples, estimates or suggestions.

We Have Executed Work in Some of the Finest Buildings Throughout the Entire Country

A Few Representative Buildings Where We Installed Our Materials

Building	Architect
New Court Room and Jury Room, Court House Annex, Pottsville, Pa.	Eric Fisher Wood, Pittsburgh, Pa.
United States Post Office, Potsdam, N. Y.	J. A. Wetmore
Greek Orthodox Church, New York	Thompson, Holmes & Converse
Bankers Trust Co., Brooklyn, N. Y.	H. Craig Severance
Boca Raton Club, Boca Raton, Fla.	Shultz & Weaver
Portchester High School, Portchester, N. Y.	Tooker & Marsh
National City Bank, New York	Walker & Gillette
Denver National Bank, Denver, Col.	Fisher & Fisher
St. Theresa's R. C. Church, Providence, R. I.	Ambrose J. Murphy
Palace Shoe Store, New Rochelle, N. Y.	Louis Allen Abramson
Brooklyn Edison Co., Brooklyn, N. Y.	Vorhees, Gmelin & Walker
Mt. Hebron High School, Montclair, N. J.	Starrett & Van Vleck
Snowden Fannestock Villa, Newport, R. I.	Russel & Clinton
Rhode Island Hospital Trust, Woonsocket, R. I.	Thomas M. James
Peoples Trust Co., Passaic, N. J.	Halsey, McCormack & Helmer



Bankers Trust Co., Brooklyn, N. Y.
H. Craig Severance, Inc., Architects
Wm. La Zink, Designer

X-ITE CORPORATION

DIVISION OF THE E. L. BRUCE CO.

MEMPHIS, TENN.

EASTERN OFFICE
Newark Parquet Floor Co.
10 Boston Street
NEWARK, N. J.

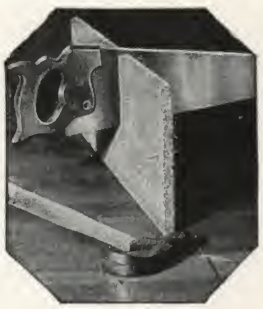
EXECUTIVE SALES OFFICE
1 No. La Salle Street
CHICAGO, ILL.

SOUTHWESTERN OFFICE
Hamilton Company, Inc.
2127 Pine Street
ST. LOUIS, MO.

REPRESENTATIVES IN PRINCIPAL CITIES IN THE UNITED STATES AND CANADA
Write X-ITE Corporation, Chicago, Ill., for Nearest Representative

Product

X-ITE, a Moulded Material for walls, floors, ceilings and ornaments, made of wood fibre, mixed with magnesite binder and color pigments. X-ITE is sawed, bored or nailed with woodworking tools; is not inflammable; neither expands nor contracts due to damp or humid atmosphere. It remains set without warping or distortion.



Colors, Textures and Sizes

Three textures are available: close, semi-shaggy, shaggy, with distinctive mottled effect.

Standard Colors		
Light	Medium	Dark
Ivory	Gold	Green
Buff	Tangerine	Moss Green
Light Gray	Old Rose	Blue
Shell Pink	Drab	Medium Brown
Tan	Olive	Dark Brown
Pale Green	Stone Gray	Black
Pink	Light Brown	Red

On large orders, colors made to specifications can be furnished.

Popular Sizes, Inches		
5½x 5½	8½x11½	11½x17½
5½x 8½	8½x17½	17½x23½
5½x11½	8½x23½	17½x47½
8½x 8½		30 x60

The above are just a few of our standard sizes, and will give an idea of the range of sizes available. The above sizes are dimensioned so as to give minimum cutting waste from our standard slab, but other sizes may be obtained. Full information in regard to special sizes can be obtained from our agent, or our plant or sales office.

Literature

"Illustrated Opinions Concerning X-ITE and Its Uses," A.I.A. file No. 23-g-2.

Illustrated Folder, "X-ITE for Walls, Ceilings and Floors."

X-ITE specifications and color charts—A.I.A. File No. 23-g-2.

The Material and Its Uses

X-ITE enjoys universal application for residences, hotels, churches, schools, apartments, office and public buildings generally. There is a warmth of tone and physical warmth under foot or to the touch, which makes X-ITE particularly adaptable in residence work to floors and walls in bathrooms, kitchens, sun parlors, breakfast nooks and recreation rooms. X-ITE floors are not slippery when wet.

X-ITE as a structural material not only reduces the initial cost of building without sacrificing beauty and permanence, but permits widest latitude in architectural expression.

X-ITE offers strength and durability. Though in the class of the harder and impervious materials—such as stone, marble, cement, and tile—X-ITE weighs only approximately 50% more than wood. A particular advantage of X-ITE is that ornamentation, such as mouldings, pilasters, spandrels, caps, etc., may be inexpensively manufactured to the architect's detail in the same texture as the flat material. X-ITE is completely finished at the factory and shipped ready to be nailed or bonded into place.



X-ITE Wall Treatment and Risers
Walthall Hotel, Jackson, Miss.
N. W. OVERSTREET, Architect

For Walls

Being prepared in colors, X-ITE offers the added attraction of ample selection to harmonize with any decorative scheme, or for use as the basic standard. Where X-ITE is used, no painting, finishing, brown or scratch coats are required. X-ITE is inexpensively maintained by washing with soap and water or waxing or oiling. Owing to its light weight, a less heavy superstructure is needed than for heavier materials.

X-ITE is installed over standard types of backing (see installation instructions). *Corners, borders, etc., can be cut with an ordinary hand saw at the place of installation* or cut at plant to detailed drawings.



X-ITE Floor—Broken Stone Pattern
Recreation Room—Walter Drake Residence
Essex Falls, N. J.

For Floors

X-ITE floors, like the walls, are without coldness or dampness and act as an insulator for both heat and cold. The natural resiliency of the material, plus a tough wearing surface with the tendency to give and not to scruff or dust, make X-ITE floors greatly to be desired as a health measure as well as one of durability or beauty.

X-ITE floors are sound absorbent—without ring or clatter; the surface texture is a natural preventive of slipping without gumminess or cohesion. The texture and colorings of X-ITE are especially effective with Spanish, early English, or Italian interior decoration. Any individual design may be followed. Much of the beauty of X-ITE is in the variegated shading and mottling of its color effects, avoiding monotony in tone. The beauty of X-ITE improves as it ages.

Miscellaneous Uses

X-ITE for window stools, in bathrooms, and above kitchen sinks, especially in connection with steel sash construction, stair treads and risers, threshold strips.

Resources

X-ITE is manufactured by the X-ITE CORPORATION, a Division of the E. L. Bruce Co., Memphis, Tenn., largest manufacturers of hardwood flooring in the world. Also manufacturers of *CELLIZED Wood Floor Tile.

See Manufacturers' Index.

ARCHITECTS' SPECIFICATIONS FOR INSTALLATION OF X-ITE WALLS AND FLOORS

Note: The following specifications are intended for the use of architects, and cover the uses of X-ITE for building purposes.

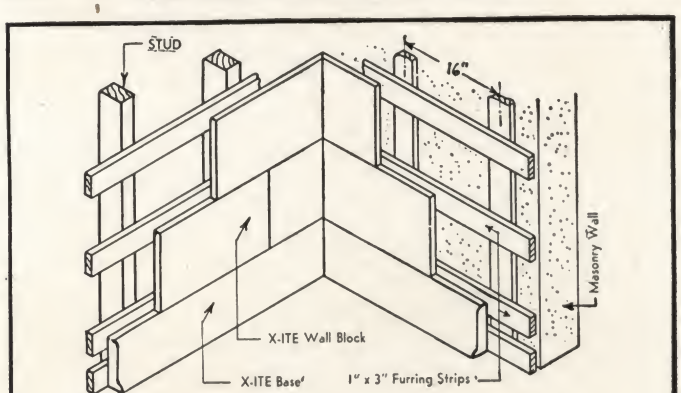
Furnish and install in the following portions of the work, X-ITE walls (and wainscot) as manufactured by the X-ITE CORPORATION of Memphis, Tennessee, erecting strictly in accordance with manufacturer's specifications *and installation instructions:* (Insert here the areas affected.)

Installation Instructions for Walls

Before applying X-ITE, the contractor shall see that all wall surfaces are true and plumb.

(*Note:* Paragraph (a), (b) or (c) should be used, depending upon the type of joint desired.)

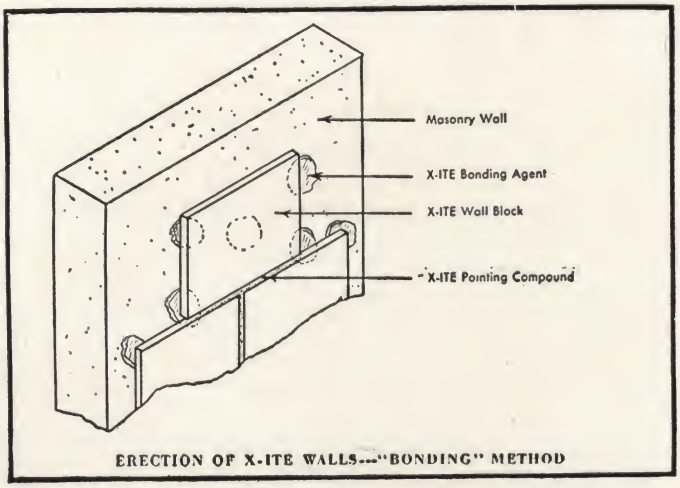
(a) V-joint—X-ITE blocks shall be ⅝ in. thick and have ⅛-in. (or ¼-in.) beveled edge to form V-joint when laid up close. All blocks shall be laid true and level.



ERECTION OF X-ITE WALLS—USING FURRING

(b) Open Joint—X-ITE blocks shall be ⅝ in. thick and have straight or square edges and shall be laid up absolutely true and level to form ⅛-in. (or ¼-in.) open joint. All joints shall be pointed with X-ITE Pointing Compound.

(c) Butt Joint—X-ITE blocks shall be ⅝ in. thick and have straight or square edges and shall be laid up absolutely true and level with butt joints. All edges of block shall be buttered with X-ITE Pointing Compound before setting the next block, excess compound being wiped off from the face immediately, keeping the block as clean as possible.



ERECTION OF X-ITE WALLS—"BONDING" METHOD

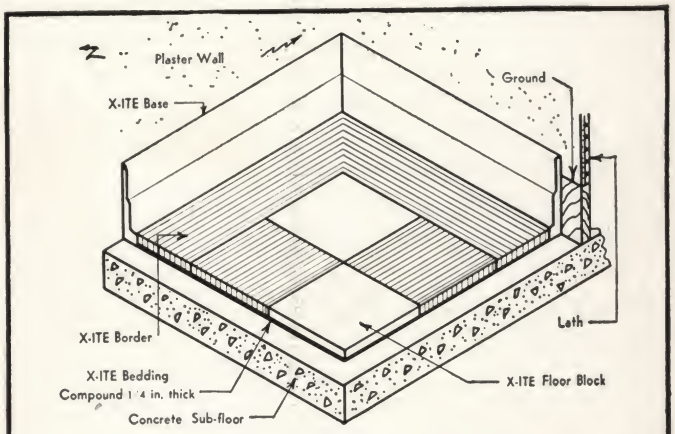
Note: The following specifications are intended for the use of architects, and they cover the adaptations of X-ITE for floors, base work, and wood, concrete or iron stair work.

Furnish and install in the following portions of the work, X-ITE floors as manufactured by the X-ITE CORPORATION of Memphis, Tennessee, laying strictly in accordance with manufacturer's specifications *and installation instructions.* (*Note:* List here the portions of the work that are to have X-ITE floors, specifying the sizes and colors of blocks to be used.)

Installation Instructions

Preparation of Wood Subfloor—(Include in Carpentry Specifications.)

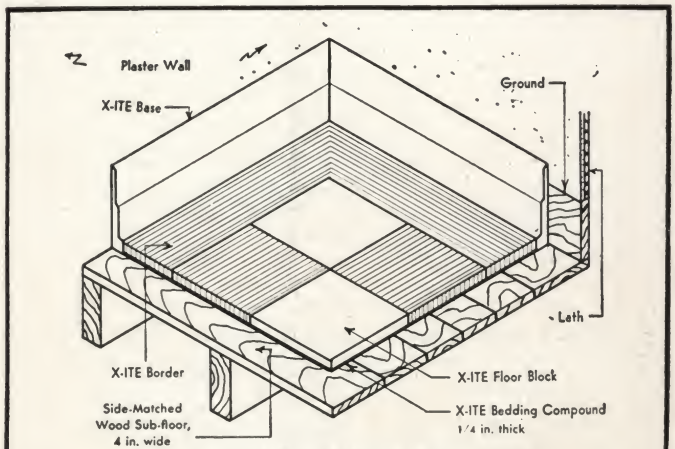
The contractor shall see that all wood subfloors where X-ITE Floors are to be laid are level and true ⅞ in. below the finish floor level, boards to be securely nailed to prevent warping. On new work the wood subfloor should be of side-matched boards not over 4 ins. wide, driven tight, well nailed, true and level.



X-ITE FLOOR BLOCKS ON CONCRETE

Preparation of Concrete Subfloor—(Include in Concrete Work Specifications.)

The contractor shall inspect the portion of the work where X-ITE Floors are to be laid and see that the subfloor is level and true ⅞ in. below the finish floor level. On new concrete work top coat need only be screeded or floated to a level surface free from projections or depressions. On old concrete work projections are to be chiseled off and depressions filled.



X-ITE FLOOR MATERIAL ON WOOD FLOOR

Laying Over Wood or Concrete Subfloor

(See drawings on this page.)

When the subfloor has been properly prepared, X-ITE Blocks, ⅝ in. thick of the size and color specified, shall be laid in ¼-in. layer of X-ITE Bedding Compound, applied as the blocks are laid. As each block is laid the edges shall be buttered with X-ITE Pointing Compound and squeezed up tight, the compound that oozes out being wiped immediately from the face. After the pointing compound has set the floor shall be washed to remove any smears or stains from the surface. *Do not sand floor.* The finished floor shall be allowed a minimum of six hours for setting before being used.

Border

X-ITE border shall be laid in the same manner as specified for X-ITE floors, in the following portions of the work (insert here the areas affected).

Base

X-ITE base, of the height indicated on blue print or as specified herewith, shall be set in the following portions of the work (insert here the areas affected).

Base shall be set in 47½-in. lengths, and secured to grounds with 6d galvanized finishing nails. Nails shall be set ⅛ in. and nailholes filled with X-ITE Pointing Compound.

Stairs

X-ITE Stair Treads and Risers shall be laid as follows:

(a) On Wood Stairs—*On new work,* treads and risers shall be nailed to wood with 6d galvanized finishing nails. Nails shall be set ⅛ in. and nailholes filled with X-ITE Pointing Compound.

On old work, former treads and risers shall be removed before installing those of X-ITE.

(b) On Concrete Stairs—Treads and risers shall be laid over a ¼-in. layer of X-ITE Bedding Compound applied as they are laid. Compound dropped on face shall be wiped off immediately, keeping face as clean as possible.

(c) On Iron Stairs—If treads and risers on iron stairs are of a network pattern X-ITE treads and risers shall be fastened by means of toggle bolts. The toggle bolt shall be countersunk and the hole filled to face surface with X-ITE Pointing Compound.

If treads and risers on iron stairs are solid and it is possible to get under the stairs, X-ITE treads and risers shall be fastened by means of wood screws through holes drilled in iron.

If impossible to work from under the stairs, the treads and risers shall be fastened by means of toggle bolts as described above.

Standard Mouldings

Although it has been found, in the majority of cases, that special mouldings are required to conform to the architect's details for the particular plans, Standard Mouldings are available for immediate shipment in reasonable quantities, and in such forms as are readily adaptable to numerous situations.

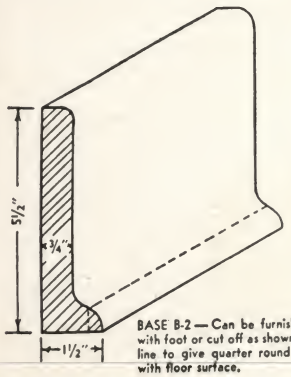
ORNAMENTAL WORK IN X-ITE

The manufacturers of X-ITE bring into the field of architecture a structural material which offers certain qualities greatly desired in modern-day building.

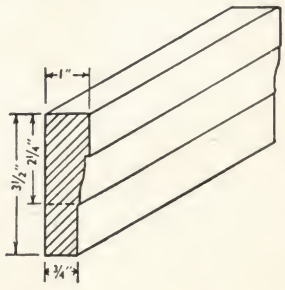
A moulded material of new wood fibre, magnesite binder and color pigments, it requires no finishing coats, and is economically maintained by washing with soap and water, or waxing and oiling.

Many standard designs of ornamental work are available or we will cast according to architect's details. Mouldings, base and stair treads and window seats are economically moulded with accuracy and perfect duplications. Suggestions, as well as assistance, as to the most effective uses of X-ITE in walls, ceilings, floors and ornaments, will be gladly given to architects and builders by our architectural department.

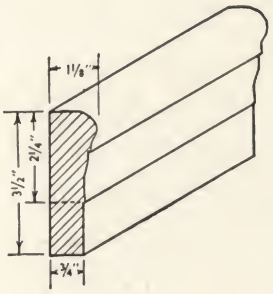
STANDARD ORNAMENTAL WORK



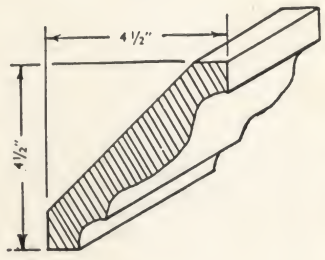
BASE B-2 — Can be furnished either with foot or cut off as shown by dotted line to give quarter round cove flush with floor surface.



WAINSCOT W-1 — Can be furnished in either 2¼" or 3½" width as shown.



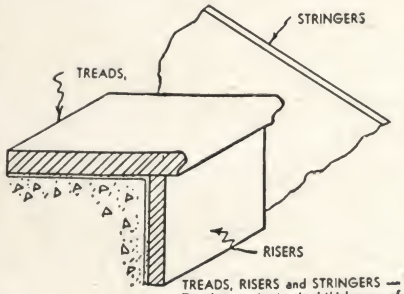
WAINSCOT W-2 — Can be furnished in either 2¼" or 3½" width as shown.



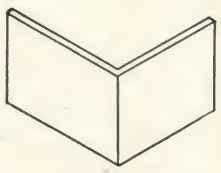
CORNICE CR-1 — Standard. Can furnish any other type of cornice to architect's detail.

Note: Can furnish any type of above, and other, wall mouldings to architect's details.

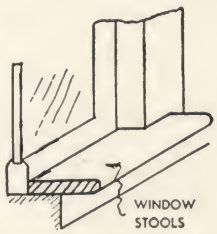
STANDARD ORNAMENTAL WORK TO SPECIFIED DIMENSIONS



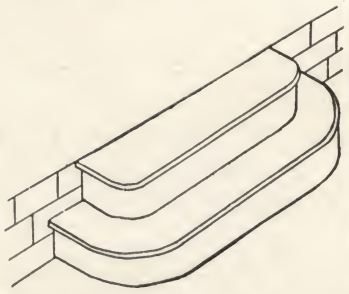
TREADS, RISERS and STRINGERS — Treads come in standard thicknesses of 1⅛" and 1¼", O. G. or round nose, length and width as specified. Risers and Stringers in standard thicknesses of ⅝", lengths up to 47½", widths up to 17½".



CORNER PIECES — In standard thicknesses of ⅝", standard widths of 5½", 8½", 11½" and 17½" to conform to wall size standards. Legs in any length up to 17½" one leg, 47½" other leg.



WINDOW STOOLS — In standard thicknesses of 1⅛" and 1¼", O. G. or round nose, length and width as specified.



CURVED TREADS AND RISERS — Can be furnished in thickness and width as specified, lengths up to six feet; over this length should be laid in sections.

Note: Above work can be furnished in other thicknesses than specified if desired.

ZENITHERM

For Walls and Floors

A PRODUCT OF

STRUCTURAL GYPSUM CORP.

535 Fifth Avenue, NEW YORK, N. Y.

REPRESENTATIVES IN ALL PRINCIPAL CITIES

For Gypsteel Gypsum Pre-cast Floors and Roofs, Gypsteel Gypsum Partition Tile and Gypsteel Gypsum Plasters, see Manufacturers' Index

zenitherm

FOR WALLS AND FLOORS

The Material

Zenitherm has all the dignity and massiveness, without the coldness, of stone.

It has all of the convenience of wood, since it can be nailed, sawed, drilled and screwed.

Zenitherm is made of a combination of selected wood fibre and highest quality calcined magnesium oxide. This is treated with a weatherproofing binder and subjected to hydraulic pressure in steel moulds. The pressure is maintained until the mass sets into a dense block, which is not only highly fire resistant but exceptionally low in absorption. It does not distort or shrink.

The process is covered by patents and its production is under factory control.

There is no substitute having the specific advantages of Zenitherm.

Qualities and Properties

Zenitherm is impervious to frost or any climatic conditions. Constant physical characteristics together with low thermal conductivity make Zenitherm preferable as a permanent material insuring comfort, beauty, durability, weather resistance and safety in its fireproof qualities.

Uses

Zenitherm is used for interior or exterior walls, floors, fireplace facings, wainscot, arches, panels, sills, stair treads, risers, string, base, walks, et cetera.

Standard Colors

Zenitherm is made in 21 standard colors: natural, buff, gold, pink, coral pink, olive, drab, light gray, stone gray, light brown, dark brown, red, green, blue, black, tangerine, havana brown, maya brown, £1000, sea green, lichen green. (See color chart, page 3).

The fact that Zenitherm is available in different shades gives the architect ample opportunity to secure beautiful and permanent effects. Colors are obtained by *mineral pigments, not dyes.*



Zenitherm Facade, Millard Building in Seattle, Wash.
McCLELLAND, PINNEH & JONES, Architects, Seattle, Wash.



Zenitherm Floors, Chapel, Franciscan Novitiate Folly Quarters, Hartford County, Md.
PALMER & LAMDIN, Architects

Zenitherm Floors were also installed in the sacristy, apse, sanctuary, recreation rooms, library, refectory, community room, archbishop's room, reception rooms and bedrooms, a total of over 10,000 sq. ft.



Zenitherm Walls, Longview High School, Longview, Wash.
WM. B. ITTNER, INC., Architects

An example of the use of Zenitherm by these nationally-known school architects, whose satisfaction with the results obtained from Zenitherm in this school has led to wide similar usage by them in other schools.

Standard Sizes

Zenitherm is made in fifteen standard sizes. Other sizes can be furnished according to specifications. Prices on application. All wall and floor material is ⅝ in. in thickness. Cove base measures 4¾ in. from top of base to finish floor. Straight plain base, any height desired. Stair treads 1¼ in. in thickness. Risers ⅝ in. in thickness. (See details of Zenitherm base stair treads and risers on page 4.)

STANDARD SIZES

Width, in.	Length, in.	Width, in.	Length, in.	Width, in.	Length, in.
5½	5½	8½	8½	11½	17½
5½	11½	8½	11½	15½	15½
5½	17½	8½	15½	15½	17½
5½	23½	8½	23½	17½	23½
5½	47½	8½	47½	17½	47½

Standard Mouldings and Trim

Zenitherm standard mouldings are made for use in conjunction with Zenitherm walls. There are thirteen different designs available. (See details on page 4.) Zenitherm mouldings and trim adaptable to ashlar surfaces assure a finish correct in design and effective in treatment.

Corner Pieces

Zenitherm solid corners are manufactured to eliminate the appearance of joining and edge mitering. (See details on page 4.) They carry out completely the effect for solid stone for columns, pilasters, beams, returns, reveals, quoins, et cetera. Where Zenitherm corner pieces are used, all edge mitering or joining is eliminated and installation costs are reduced to a minimum. Zenitherm corner pieces are supplied only when called for.

Door Saddles

On page 4 are detailed five different types of Zenitherm door saddles which may be explained as follows:

Type A—Made from standard ⅝-in. material. The maximum dimensions are 47½ in. long and 17½ in. wide.

Type B—This type is standard ⅝-in. material planed in such a manner that it acts as a ramp between Zenitherm floor level and adjacent floor level.

Types C and D—These are special hand cast saddles and can be had up to a length of 5 ft. Maximum width for safe shipping 17½ in.

Type E—Any saddle made in accordance with architect's detail.



Zenitherm Floor, Executive Offices, McGraw-Hill Publishing Co., Inc., New York, N. Y.

Weight Data

The following information will be found valuable in computing the freight costs on Zenitherm:

⅝-in. Zenitherm.....4½ lb. per sq. ft.

Bedding compound:

*3½ lb. per sq. ft. for ¼-in. bed,
*1¾ lb. per sq. ft. for ⅛-in. bed.

*This includes the weight of the liquid binder.

1¼ in. stair treads.....8 lb. per sq. ft.

Note: In the case of ⅝-in. material for walls, the weight is to be based on the gross area; that is, net area plus 15%. It is essential that the additional 15% be added in, as it is impossible to tell what portion of the allowable waste must be shipped in order to complete the job.

The weight of ⅝-in. material for floors should be based on net area plus 8%, as it is necessary to send some waste over the actual net required.

For all ornamental items, except standard mouldings (which can be taken on the basis of the 1¼-in. treads), it is wise to figure 10 lb. per sq. ft. for an average thickness of 1 in. While the material itself does not weigh quite this much, it is often necessary to pack it in bulky boxes which have a tendency to raise the weight out of proportion to the actual pieces shipped.

Installation

Zenitherm presents no difficulties of installation. The blocks, cut into standard sizes at the factory, are face nailed with galvanized finishing nails to furring, or haired brown coat of plaster or mortar, for ashlar surfaces. Zenitherm Floors follow the standard method of installing floor materials. Any competent carpenter can lay Zenitherm Floors and erect Zenitherm Walls if a reasonable amount of care is exercised.

Our "Installers' Guide" gives full information and helpful suggestions to make the installation of Zenitherm a simple task. A copy is furnished with every order.

Literature for Architects, Their Clients and Contractors

We have several booklets and folders available which we shall be glad to mail on request. Included among these publications are "Zenitherm for Walls and Floors"; "Zenitherm Defined"; "Banking on Zenitherm"; "Some Architectural Mouldings and Bases Achieved with Zenitherm"; "Installers' Guide"; "Zenitherm for Church Buildings"; "Zenitherm for Educational Buildings"; "Zenitherm Floors of Character."



Zenitherm Floors, Beauty Salon, Best & Co. Department Store, New York, N. Y.



Zenitherm Walls, Sheffield Farms Dairy, Cow Milking Parlor, Pompton Lakes, N. J.

LIGHT COLORS

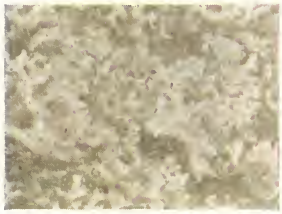

DRAB

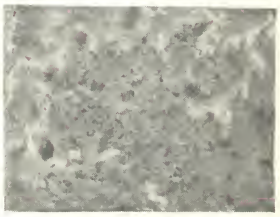

CORAL PINK


GOLD


PINK


NATURAL


OLIVE


STONE GREY


LIGHT GREY


BUFF

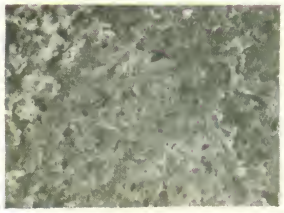
STANDARD COLORS

These exact reproductions of the entire range of Zenitherm shades and colors illustrate the beauty and character of Zenitherm texture and coloring. Note how well the flat monotony of solid tones is eliminated through the variation of color and texture in each piece. With this variation, however, a general harmonious tone is maintained, and the effect of the finished Zenitherm floor or wall is both pleasing and desirable.

zenitherm

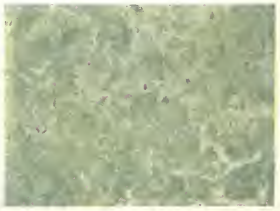
FOR WALLS AND FLOORS

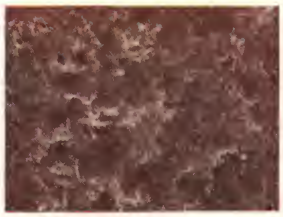
DARK COLORS

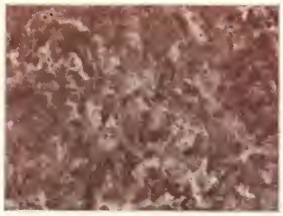

LICHEN GREEN


SEA GREEN

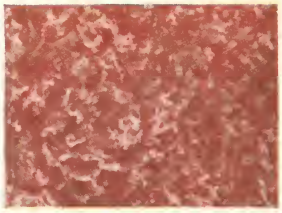

DARK BROWN


GREEN


LIGHT BROWN


MAYA BROWN

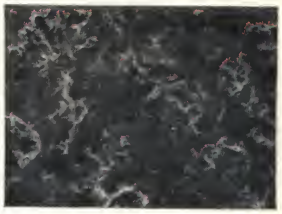

BLACK


RED


TANGERINE


BLUE

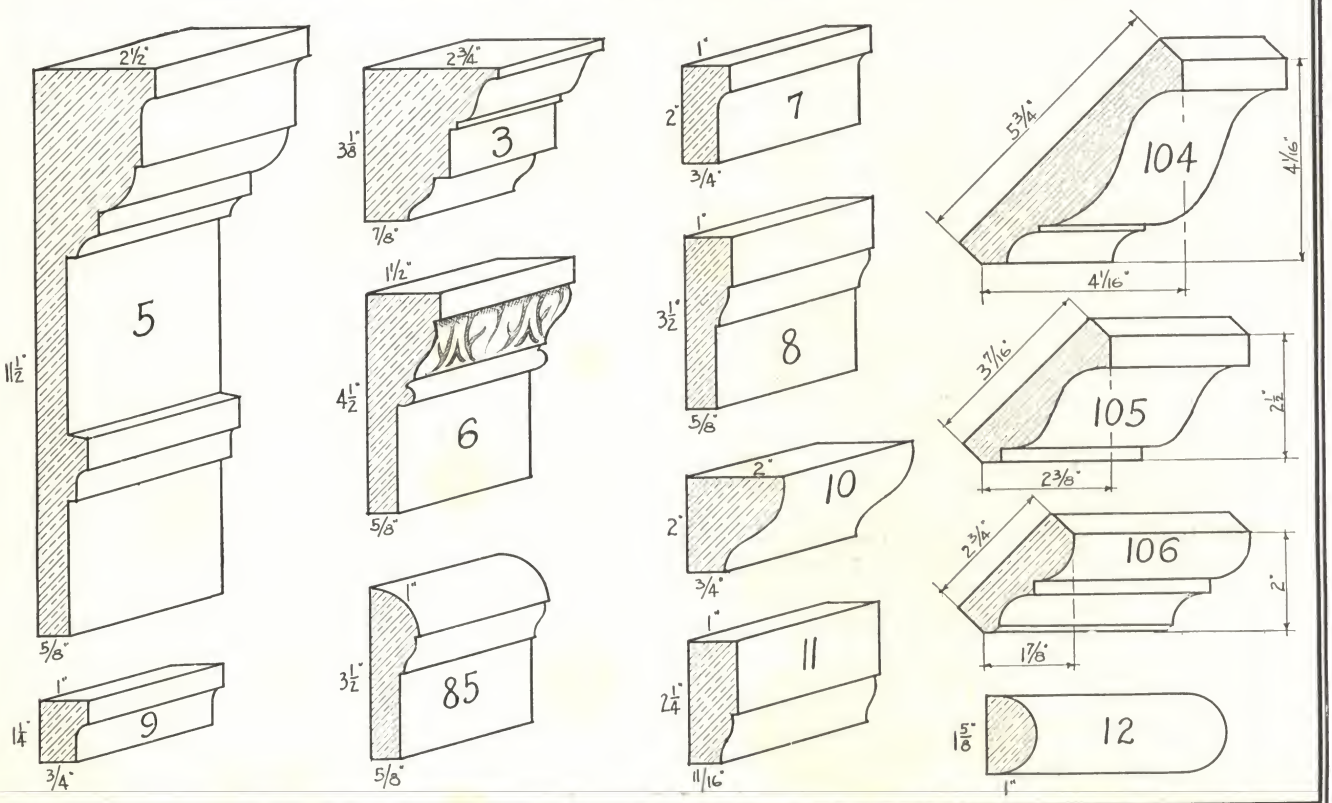

HAVANA BROWN


£ 1000

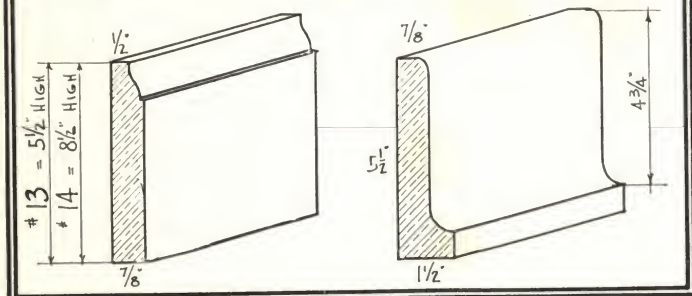
ZENITHERM ORNAMENTAL WORK

The use of Zenitherm for architectural and decorative ornament has certain decided advantages over the use of stone or a similar material. Zenitherm mouldings, base and stair treads can be obtained at moderate cost. Zenitherm is pressed, not cut, thereby insuring perfect detail and absolute duplication. Zenitherm can be supplied in a variety of colors at no extra cost. No surfacing or finishing is necessary, thus adding to the economy of its use. Our architectural department is always glad to assist architects and builders with suggestions as to how Zenitherm may be used most effectively.

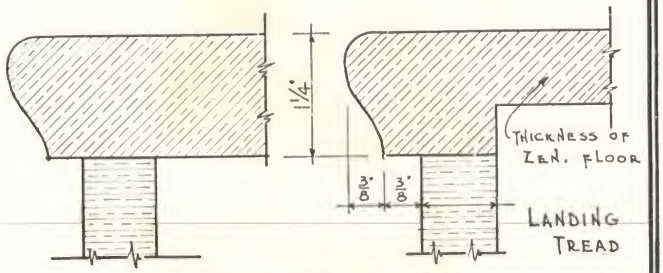
STANDARD MOULDING DETAILS



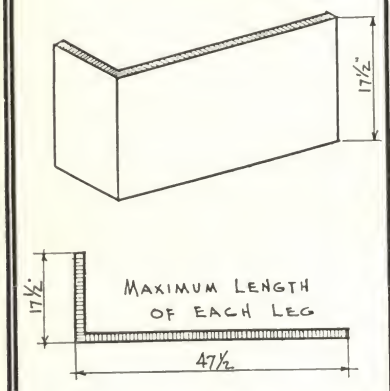
STANDARD BASE DETAILS



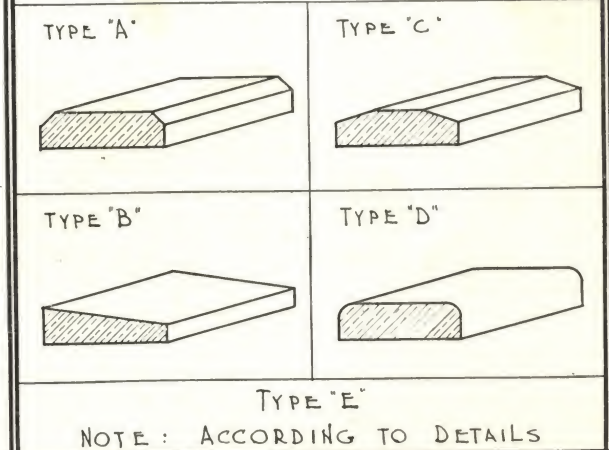
STANDARD TREADS & RISERS



SOLID CORNER PIECES

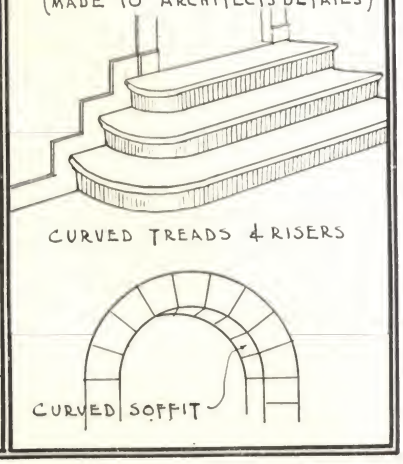


TYPICAL DOOR SADDLES



SPECIAL CURVED MATERIAL

(MADE TO ARCHITECT'S DETAILS)



SPECIFICATIONS FOR THE PROPER INSTALLATION OF ZENITHERM

The following Specifications Are Recommended for Architects' Use. They Are Designed to Cover All Possible Uses of Zenitherm

SPECIFICATIONS FOR ZENITHERM FLOORS

Zenitherm Floor on Wood Underfloor

(1) Furnish and install in the following portions of the work, Zenitherm Floors as manufactured by the STRUCTURAL GYPSUM CORP., 535 Fifth Avenue, New York, N. Y., laid strictly in accordance with the following specifications and the manufacturer's directions.

Note: List here the portions of the work that are to have Zenitherm Floors and specify the sizes and colors of blocks to be used.

(2) **Preparatory Work**—Before the Zenitherm Floors are laid, the General Contractor shall see that all wood underfloors are level and true ¾ in. below the finish floor level; boards to be laid up tight and securely toe-nailed to prevent warpage. Wood underfloor on new work should be tongue and groove flooring not over 4 in. wide, driven tight, well nailed, true and level.

(3) When the underfloor has been properly prepared, Zenitherm blocks ⅝ in. thick shall be nailed directly to the underfloor. A ⅛-in. skim coat of Zenitherm Bedding Compound shall be spread over the wood underfloor as the laying of the blocks proceeds, filling up any depressions to a true and level surface. As the blocks are laid, edges of blocks shall be buttered with Zenitherm Pointing Compound and squeezed up tight, the surplus compound that oozes out being wiped off immediately after nailing. 6d hot-dipped galvanized finishing nails shall be used and shall be set ⅛ in., the nail holes being filled with Zenitherm Pointing Compound.

Zenitherm Floor on Concrete Underfloor

(4) Furnish and install in the following portions of the work, Zenitherm Floors as manufactured by the STRUCTURAL GYPSUM CORP., 535 Fifth Avenue, New York, N. Y., laid strictly in accordance with the following specifications and the manufacturer's directions.

Note: List here the portions of the work that are to have Zenitherm Floors and specify the sizes and colors of blocks to be used.

(5) **Preparatory Work**—The General Contractor shall see that provision is made for leaving the concrete underfloors *level* and *true* ⅞ in. below the finish floor level. On new concrete work, top coat need only be screeded or floated to a *level* ⅞ in. below finish floor level. Troweled surface not needed nor desirable, but a uniform level must be maintained.

(6) Over the level and true underfloor shall be spread a ¼ in. thick layer of Zenitherm Bedding Compound as the blocks are laid, filling up any depressions to proper level by the use of the Zenitherm Bedding Compound. The backs of the Zenitherm blocks shall be cleaned of dust and dirt. The Zenitherm blocks shall be buttered on two edges with Zenitherm Pointing Compound and set in position, care being taken to keep the Compound off the finished surface of the blocks. The finished floor shall be allowed a minimum of ten hours for setting.

(7) **Border**—Zenitherm border shall be laid in the same manner as specified for Zenitherm Floors.

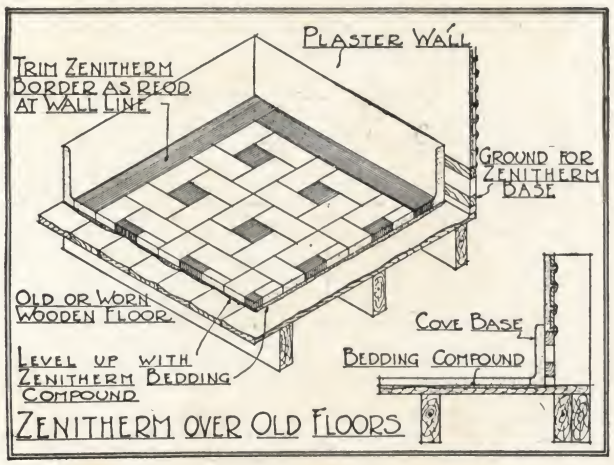
(8) **Base**—Zenitherm base, of the height indicated on drawings or specified herein, shall be set in the following portions of the work:

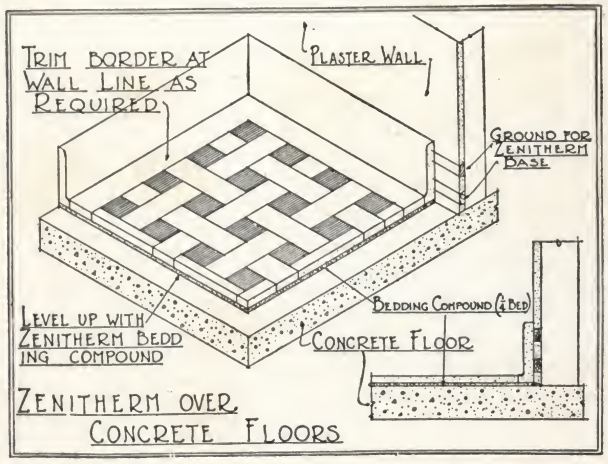
(Insert here the areas affected.)

(9) Base shall be set in 47½-in. lengths, in blocks ⅝ in. thick and secured to grounds with 6d hot-dipped galvanized finishing nails. Nails shall be set ⅛ in. and nail holes filled with Zenitherm Pointing Compound.

(10) **Stairs**—Zenitherm stair treads and risers (and strings) shall be laid as follows:

Note: On wood stairs, Zenitherm should be specified as above for Zenitherm Floors over wood underfloor. On concrete stairs, Zenitherm treads should be specified exactly as for floors over concrete. On iron stairs, specify as follows: Toggle bolt shall be inserted through hole in iron step. The toggle bolt shall be countersunk and hole filled to surface of Zenitherm tread or riser with Zenitherm Pointing Compound. If it is possible to get under the stairs, drill hole through the iron and fasten with wood screw. The use of stove bolts is optional, in which case countersink head in Zenitherm tread and point with Zenitherm Pointing Compound. It is safer to use galvanized or brass screws to avoid development of rust spots.





SPECIFICATIONS FOR ZENITHERM WALLS

Zenitherm on Interior Walls

(11) Zenitherm Walls and wainscot shall be provided in the following portions of the work:

Note: If Zenitherm Floors have not been previously specified, paragraph 12 should be used instead of paragraph 11.

(12) Furnish and install in the following portions of the work, Zenitherm Walls (and wainscot) as manufactured by the STRUCTURAL GYPSUM CORP., 535 Fifth Avenue, New York, N. Y., laid strictly in accordance with the following specifications and the manufacturer's directions:

(Insert here the areas affected.)

(13) Before the Zenitherm is applied, the General Contractor shall see that all wall surfaces are true and plumb.

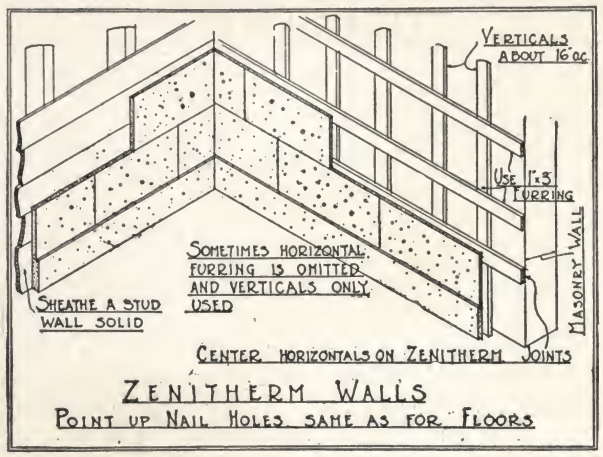
Note: Paragraph 14, 15, 16 or 17 should be used, depending upon the type of joint desired.

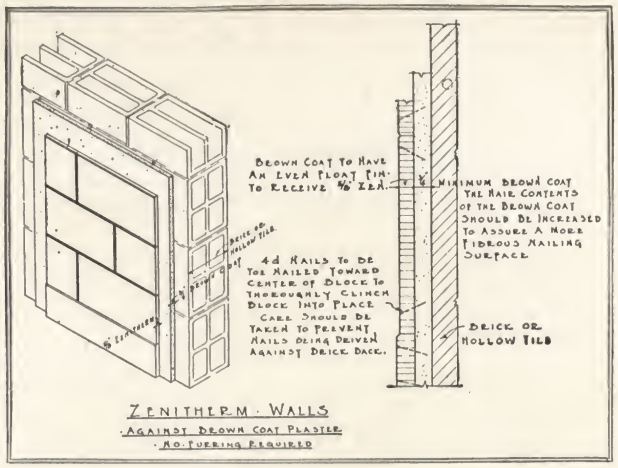
(14) Zenitherm blocks shall be ⅝ in. thick and shall have ⅛-in. (or ¼-in.) chamfered edges to form V joint when laid up close. All blocks shall be laid up absolutely plumb and true. All edges of block shall be buttered with Zenitherm Pointing Compound before setting the next block, all excess Compound being wiped from the finished face of the block.

(15) Zenitherm blocks shall be ⅝ in. thick and shall have straight and square edges and shall be laid up absolutely plumb and true to form ⅛-in. (or ¼-in.) open joint. All edges of block shall be buttered with Zenitherm Pointing Compound before setting the next block, all excess Compound being wiped from the finished face of the block. (Solid sheathing instead of furring strips is best with open joint design.)

(16) Zenitherm blocks shall be ⅝ in. thick and shall have straight and square edges and shall be laid up absolutely plumb and true with butt joints. All edges of block shall be buttered with Zenitherm Pointing Compound before setting the next block, all excess Compound being wiped from the finished face of the block.

(17) *Note:* If rusticated joints are desired, indicate the depth and width of the rustication and have specification read: Zenitherm Walls with rusticated joint shall be installed in strict accordance with the manufacturer's directions.





(18) **Bathrooms**—The wood backing around tubs and shower stalls shall be covered with a layer of heavy waterproof paper or Ruberoid, applied like flashing at rim of tub or shower pan, and the Zenitherm shall be nailed with 6d galvanized finishing nails, driven at an angle, nails to be set ⅛ in. and the nail holes filled with Zenitherm Pointing Compound. All edges of block shall be buttered with Zenitherm Pointing Compound before setting the next block, all excess Compound being wiped from the finished face of the block.

(19) **On Concrete, Hollow Tile or Masonry Walls Using Furring—**

Note: It is recommended, for the sake of economy, that wood nailing blocks be provided when the wall is erected, to which attach ⅞x3-in. furring strips.

(20) Zenitherm blocks shall be nailed to furring strips or sheathing with 6d galvanized finishing nails as above specified.

(21) Center all vertical joints of Zenitherm ashlar on furring strips, and, where double furring is used, center horizontal joints on horizontal furring strips. (In lieu of horizontal furring, the vertical furring may be covered with sheathing.)

Note: If close joint is specified, butter edges of block with Zenitherm Pointing Compound. Point open joints as specified under paragraph 15.

(a) *Alternate*—Secure furring for Zenitherm with expansion bolts.

(b) *Alternate*—On hollow tile walls, secure vertical furring with toggle bolts about 18 in. on centers. Apply horizontal furring as above.

(22) **On Cinder Nailing Block or Gypsum Block Walls, Without Furring or Sheathing—**

Note: The General Contractor shall see that provision is made for the application of a skin coat of haired brown coat of gypsum plaster or mortar sufficient to bring the wall plumb, true and straight ⅝ in. behind finished wall face.

(23) Zenitherm shall be face-nailed in the usual manner with *brass* finishing nails, nails being driven at an angle directly into the supporting wall. Nail holes shall be pointed as above.

(24) **On Brick, Concrete, Hollow Tile or Masonry Walls, Without Furring or Sheathing—**

Note: The General Contractor shall see that provision is made for the application of a minimum ¾ in. thickness of haired brown coat of gypsum plaster or mortar, bringing wall perfectly true, plumb and straight ⅝ in. behind finished wall face.

(25) Before applying the Zenitherm, this contractor shall see that the brown coat of gypsum plaster or mortar is thoroughly set and dry, true, plumb and straight, of proper strength and nailable.

(26) Before nailing the Zenitherm Blocks, the back surface of blocks shall first be spread with a thin coating of Zenitherm Bedding Compound over the entire surface of the block. The block shall be pressed plumb into place against the plaster backing and nailed as specified below.

(27) Zenitherm shall be nailed with hot-dipped galvanized finishing nails driven through face of Zenitherm at an angle into the brown coat (specify 3d nails for ¾-in. thick brown coat; 4d for brown coat thicker than ¾ in.). Use 4, 6 or 8 nails, according to size of block. Edges of Zenitherm blocks shall be buttered with Zenitherm Pointing Compound while being erected. Nails shall be set ⅛ in. and filled with Zenitherm Pointing Compound.

Zenitherm on Exterior Walls

(28) **Frame Construction**—Sheathing shall be covered with waterproof building paper and Zenitherm blocks nailed to sheathing with 6d brass finishing nails. Nails shall be set ⅛ in. and nail holes filled with Zenitherm Pointing Compound.

Note: If close joint is specified, butter edge of block with Zenitherm Pointing Compound and squeeze into place before nailing, wiping off excess compound. Point open joints as specified under paragraph 15.

(29) **Masonry Construction**—⅞x3-in. furring strips shall be nailed to wood plugs or metal wall plugs set in masonry wall. Zenitherm blocks shall be nailed to furring strips with 6d brass finishing nails, the nails set ⅛ in. and the nail holes filled with Zenitherm Pointing Compound. All vertical joints of Zenitherm ashlar shall be centered on furring strips where single furring only is used. Horizontal joints shall be centered on horizontal furring strips where double furring is used. Vertical furring may be covered with sheathing instead of the use of horizontal furring.

Note: (a) If close joint is specified, butter edges of block with Zenitherm Pointing Compound. Point open joints as specified under Frame Construction.

(b) *Alternate*—Secure furring for Zenitherm with expansion bolts.

(c) *Alternate*—On hollow tile walls, secure furring with toggle bolts about 18 in. on centers vertically.

SOME REPRESENTATIVE ZENITHERM INSTALLATIONS

Joseph E. Widener Residences, New York, N. Y. and Palm Beach, Fla.
Otto Kahn Residence, Palm Beach, Fla.
H. H. Flagler Residence, New York, N. Y.
Jay Gould Residence, New York, N. Y.
Max D. Steuer Residence, New York, N. Y.
John Hartford Residence, Vallhalla, N. Y.
Harry Payne Whitney Residence, Wheatley Hills, N. Y.
E. T. Stotesbury Residences, Bar Harbor, Me. and Palm Beach, Fla.
Eugene G. Grace Residence, Bethlehem, Pa.
Custer School, Berwyn, Ill.
Southern Junior High School, Somerville, Mass.
Lehigh University, Lehigh, Pa.
Chicago University, Chicago, Ill.
L. Bamberger & Co. Department Store, Newark, N. J.
B. Altman & Co. Department Store, New York, N. Y.
T. Eaton Co. Department Store, Toronto and Montreal, Canada
Crane Co. Showrooms (in over 100 cities)
First Swedish Baptist Church, New York, N. Y.
Church of the Immaculate Conception, New York, N. Y.
Temple Emanu-el, Paterson, N. J.
Gaston Presbyterian Church, Philadelphia, Pa.
St. Anne's Church, Philadelphia, Pa.
Rockland County Court House, Harrisonburg, Va.
William Wrigley, Jr., Company, Chicago, Ill.
L Street Bath, South Boston, Mass.
Scottish Rite Temple, Kansas City, Mo.
Union League Club, Philadelphia, Pa.
Haddon Hall Hotel, Atlantic City, N. J.
Shoreham Hotel, Washington, D. C.
Virginia Power and Light Company, Newport News, Va.
United States Post Office, New Canaan, Conn.
Matson Liners "Mariposa" and "Monterey" (San Francisco-Honolulu)

THE STRUCTURAL SLATE COMPANY

PEN ARGYL, PENNSYLVANIA

BRANCH OFFICES IN EVERY PRINCIPAL CITY

GRADING, SURFACES, FINISHES

Slate for general structural uses is produced in one quality only, but the stone is divided into two natural gradings known as "Clear stock" and "Ribbon stock."

Ribbon Stock



Slate Wainscot, Showing Typical Markings of Ribbon Stock

About 80% of the natural slate has ribbon veinings, which in no way affect its impermeability or strength.

The appearance of the ribbon stock varies indiscriminately, selection for ribbons never being made. *Ribbon stock is standard for structural and sanitary installations, and will be furnished for such purposes unless the clear stock is definitely specified.*

In keeping with the modern trend of architecture ribbon stock lends a distinctive and modernistic appearance to the installation.

Clear Stock

Represents the remaining 20% of the natural slate. It may contain some "knarls," but is free from ribbons, the elimination of which seems desirable from the standpoint of appearance in some cases. Its cost is from 30 to 40% more than ribbon stock.



Split Face Surface
Actual size

Color

The slate produced in the Pennsylvania District is the familiar "slate gray" with which color everyone is acquainted.

Split Face Surface

This is the surface left as a result of the first cleaving or splitting. Due to natural cleavage a variation may occur in thickness which is not undesirable for the usual application of split face slate.



Planed Surface
Actual size

Use—Split face finish should be used where a rough surface or texture effect is desired, such as outside steps, terrace floors, cloister effects, stepping stones or garden walks.

Planed Surface

This is the surface left by the planing machine. While it has not the rough characteristics of the split face finish, the marks of the plane are faintly indicated.

Use—Planed surface for reasonable economy should be used for the underside of stair treads, landings and risers, and wherever uniformity of finish is not essential.



Standard Sand Rubbed Finish
Actual size

Standard Sand Rubbed Finish

After being smoothed by the plane, slate is sand rubbed under the action of sand and water on large revolving metal disks. The result is a uniformly smooth, even surface, having the slightest kind of a grain or stipple. *This surface finish will be supplied unless otherwise specified.*

Use—Standard sand rubbed finish is used for toilet room partitions, lavatory stalls, shower baths, urinals, washtubs, tanks, etc., unless in special instances it is desired to go to the additional expense of honing.

Honed Finish

Honed finish is much smoother than sand rubbed, being the nearest approach to actual polish that can be given slate. It is not a suitable finish to be used where slate is subjected to the constant abrasion given floors, stair treads, thresholds, etc.



Honed Finish
Actual size

Honing is the finest finish which can be applied to slate, and is desirable on all vertically erected slate where the expense can be justified. The cost of honing is approximately ten cents per square foot.

Use—Same as for sand rubbed slate where a finer finish is desired.

Steel Sawed Edges

This is the surface left by the saw on the edges of all slate—a series of curved serrations somewhat resembling a coarse tooled finish.



Sawed Edges
Actual size

Use—Sawed edges are particularly adaptable to the faces of thick window sills, edges of wall copings, the straight nosing of outside steps, etc.

While the origin of slate has no particular bearing upon the architectural use of this material, so many architects have manifested an interest in the history of the product that a short summary to begin with might be of interest.

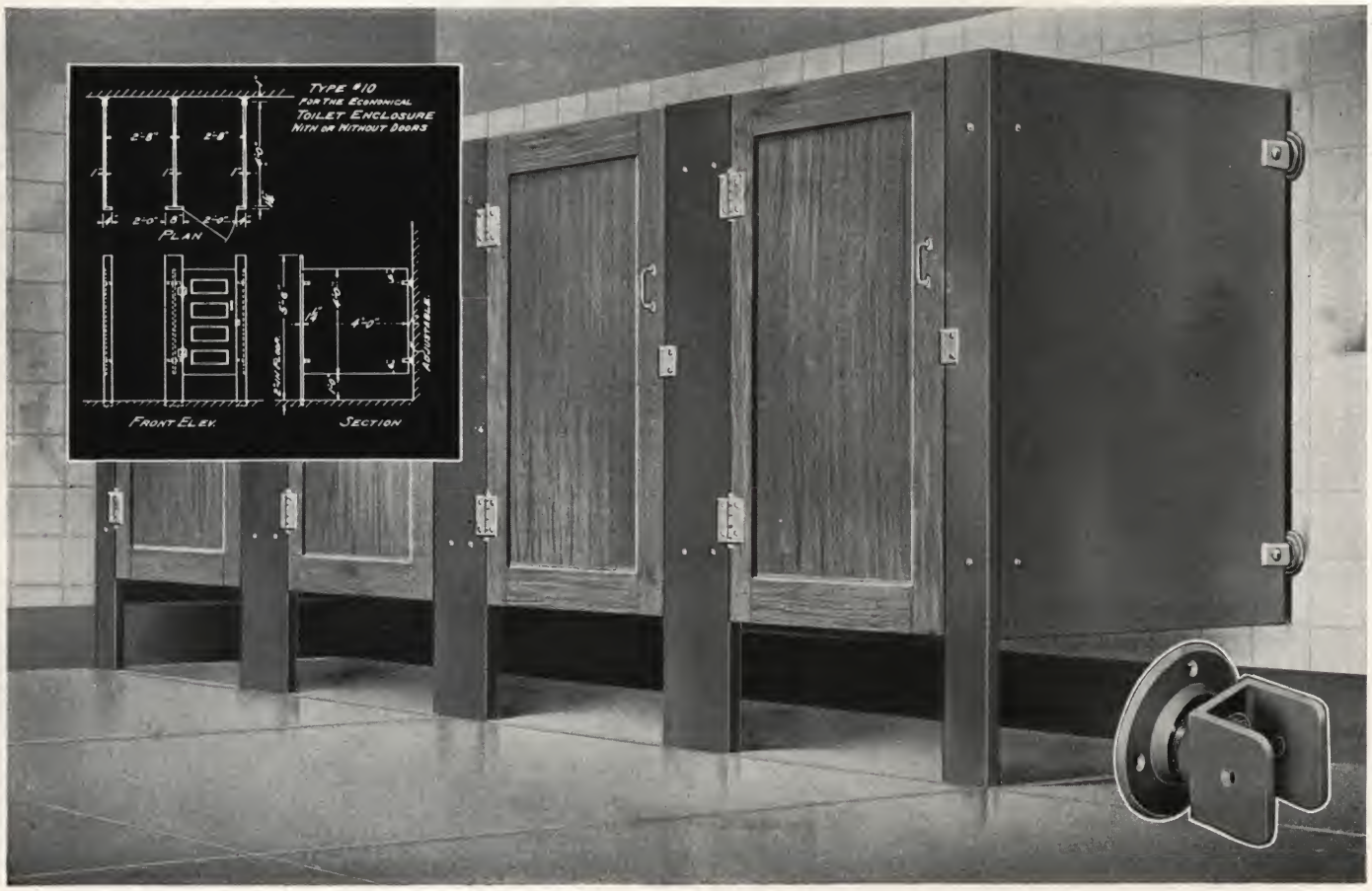
Clays carried down by rivers gradually accumulated in thick beds on the ocean floor. Succeeding layers of sand, gravel or limestone laid down over them and compressed into compact shale beds begins the story of slate. In later years the mountain building forces, ever at work in the earth's crust, crumbled and folded the shales under the influence of intense pressure and high temperature which changed the original clay into new minerals such as mica, quartz and chlorite. Mica and chlorite occur in minute flakes, and pressure causes them to assume position with their flat surfaces parallel. This gives to slate its remarkable splitting property which is its most characteristic feature. The intense pressure compacts the rock into a dense mass of great strength and exceedingly low porosity.

The color of slate is the familiar slate gray of which all are acquainted with and found in Lehigh and Northampton counties of Pennsylvania where the most choice rock is quarried.

The strength of this material is an important property for construction work. As it consists chiefly of very small over-lapping flakes consolidated under immense pressure, *its crushing strength ranges from 10,000 to 30,000 lbs. per sq. in.* The modulus of rupture of commercial slate ranges from 7,000 to 12,000 lbs. per sq. in. and when speaking of the strength of this material it is interesting to know that many roofing slates ranging only from $\frac{3}{16}$ to $\frac{1}{4}$ in. in thickness will, when supported only near the ends, sustain without breaking the burden of a man weighing 200 lbs. stand-



Above:
Gray spatter Struco showers in Margarita Club, Evanston, Ill. Morrison & Wallace, Chicago, Architects. ***Below:*** *The newly designed partition that not only reduces purchase cost but effects real economy in erecting.* ***The adjustable bracket takes*** *care of any wall irregularities and leaves space back of the partition for sanitation. Detail illustrates longer stiles when doors of extra height are required.*





Above:
Verde Antique Struco wainscoting, German House Auditorium, St. Louis, Mo. Jacob Heim, Architect.

Below:
Stair treads, risers and base and Struco Spanish wainscoting in The Polish National Home, Hartford, Conn. Henry F. Ludorf, Hartford, Conn., Architect.



Below:
Slate base in the Mayview Hospital at Pittsburgh, Pa. Eric Fisher Wood, of Pittsburgh, Architect. The slate base makes a sanitary installation and may be cleaned as often as necessary without harm to the slate.



ing near the center. Pore space on which absorption chiefly depends, is another important feature of structural materials. Products of high absorption are subject to disintegration by frost action. They also retain and conduct moisture, giving damp and musty walls or floors. Here slate again fits in ideally because of its remarkably low porosity making it almost nonabsorptive. The percentage of porosity ranges from 0.02 to about 0.5. Slate is therefore particularly well adapted for sanitary uses.

Another feature is the elasticity of slate. Elasticity is a measure of the ability of a material to regain its original shape after deformation. High-grade slate is almost perfectly elastic, even up to the limit of its ultimate strength. Thus, a heavy burden will never result in slate sagging.

Durability of any material that must give constant service is an important factor for consideration. Slate consists essentially of stable silicate minerals that are very resistant to weathering and consequently slate is one of the most enduring of all building materials, and will far outlive most structures in which it is placed.

Now comes the important part of slate trade-marked "Pyramid." THE STRUCTURAL SLATE COMPANY, is made up of many quarries producing only the finest slate in the region; shipping its material under the Pyramid name and trade-mark. Being familiar with the qualities of slate rock occurring in various beds and quarries the products of the different beds are classified according to the uses for which they are best adapted. For example, slate specified for stair treads is taken from those beds where the slate rock is especially hard and has a high resistance to abrasion. Architects and builders can depend upon this long established company and be guaranteed the right slate rock for the purpose specified, if they will insist upon the delivery of all material plainly trade-marked "Pyramid Slate."

For years slate has been used for toilet partitions because of the exceptional qualities of this natural material. Too much emphasis cannot be placed upon the importance of securing a material for toilet partitions that will not rust or corrode, dent, absorb moisture, or in others word, give unsatisfactory service. The same holds true for shower stalls, probably more so than toilet partitions, where the material is constantly subjected to water and moisture.

It will be of interest to know that tests on natural slate are constantly being made. This perpetual check is but another proof of the care given this product before shipment. A recent test was made on several pieces of slate dried in an electric oven for 24 hours at a temperature of 120 degrees centrigrade. They were cooled to a normal room temperature and weighed and completely immersed in water for 24 hours, after which the surface water was dried off and the slate weighed again, resulting in an average absorption of only *174 one-thousandth of one percent.* This is important particularly when a material must be subjected to continual dampness. It assures the architect of a material that is undeniably sanitary for the reason that any dirt or stains have not penetrated beneath the surface and can be easily washed off. Strong germicidal solutions many times used for sanitary reasons, particularly in hospitals, can be applied without fear of harming the slate. Its dense strength and compact nature assures an installation of permanence. The same qualities that make slate so ideal for toilet and shower partitions, ward cubicles, etc., applies also to wainscoting with an additional feature of interest to architects.

Because of the great strength of slate it can be quarried in long slabs. This is particularly advantageous for wainscoting for the reason that it eliminates small joints. An installation of wainscoting in slate has an even smooth plane with no small joints and cracks to later open and admit dirt.

All of these installations can either be furnished in the natural color of slate or in Struco Slate.

Struco Slate is the same natural slate rock but finished with a special nitrocellulose lacquer which gives the hardest and most durable surface of any finishing material. This lacquer finish which was adopted after years of experimentation and research among the various finishes subject to hard usage, resulted in a development of special materials which now constitute the standard formula for Struco. As the lacquer finish is chemically inert, it will not deteriorate with age, and with the care which would normally be given any highly polished surface, it will retain its beauty indefinitely. Where an architect demands color it is most desirable, for *it is the only natural rock that can be furnished in any color desired.* A special chapter, printed in full color illustrating various types of installations in Struco will gladly be sent upon request.

We come to two uses for a material in which the element of abuse enters strongly into the picture. These two are: first, stair treads and second, base. If a material is soft and will not resist abrasion, stair treads will be replaced all too quickly and if a material will dent and scratch the base in a building, will become unsightly and require refinishing.

Replacement and refinishing is overcome when both stair treads and base are of slate, for this dense, tough material absolutely resists abuse.

In order to determine the resistance of slate to wear and tear, tests were made upon both Clear and Ribbon stock. These tests followed the standard method advocated by the American Society for Testing Materials which are much more severe than the actual wear caused by the most continual usage. In the abrasion test as made, samples of slate were placed in the Duval Abrasion Machine for ten thousand revolutions at from 30 to 33 to the minute. In the Clear stock the percent of wear *was only 5.118 percent* and in the Ribbon stock *11.08 percent.* In comparison with this remarkable test on abrasion which applies directly to stair treads, floors and other uses receiving constant wear, it is interesting also to note the toughness of this material when considering its use for base and other purposes constantly subjected to abuse. This particular test also followed the regulations of the American Society for Testing Materials to determine the resistance of slate to fracture under impact, expressed as the final height in centimeters of the blow of a standard hammer to cause fracture of a cylindrical test specimen of given dimension.

Using slate of 0.9373 inches diameter 1 in. high, the average final height of blow on Clear stock was 11.5 cm., and on Ribbon stock 8 cm.

Because of its excellent quality its use for interior and exterior window sills and for spandrels has met with tremendous success.

Natural slate offers a thoroughly satisfactory solution to the problem of selecting the right material for the window sill. Its solidity of structure and tensile strength; its non-contraction and non-expansion under any degree of thermal variation; its imperviousness to moisture; its resistance to blows, abrasion and wear; its failure to discolor when in contact with ordinary acids and caustics and its absolute endurance makes



Above:

Exterior window sills, Mayview Hospital, Pittsburgh, Pa.; Eric Fisher Wood, Pittsburgh, Pa., Architect. Because slate is impervious to moisture and because it will not contract or expand it is the ideal window sill material.

Below:

Slate spandrels on the Cardozo Building, St. Paul, Minn.; Ellebre & Co., of St. Paul, Architects. The architects write as follows regarding this job: "The deep black color effect has proven very interesting and the finish seems to stand up perfectly under the severe climatic conditions in this territory."





Above:
The Cinderella Cosmetics Building, St. Paul, Minn., with its interesting and striking Belgian Black Struco slate front. Designed by Werner Whitcamp, internationally known modernist and art director.

Below:
The charming effect of roof and floor of slate that blends with all outdoors. This irregular floor and graduated roof gives the architect unity and is architecturally sound and appropriate to its surroundings.



its application ideal. Direct exposure to extremes of sunlight and action of frost has no effect upon slate. The use of this material reduces maintenance cost of a building and adds greatly to its appearance. A special chapter on Window Sills containing details and specifications will be gladly sent upon request.

The use of slate spandrels in modern building has become increasingly popular with modern architecture.

Their smooth black surface which will never fade adds a distinctive touch to the exterior of the building, accentuating the long vertical lines so desirable. In addition to its natural characteristics is its ability to take sandblasting or carving when required.

The building front of the new Cinderella Cosmetics building, completed some time ago by this company, in St. Paul, Minn., with its 25-ft. glass tower and colored lighting effect, was beautified by the Belgian Black Struco Slate front. The Belgian Black Struco slate in vivid contrast with the silver trim has produced a brilliant and magnificent effect.

The beautiful coloring, distinctive texture and natural decorative characteristics of slate for flooring offers the architect a material of unusual value. The warm coloring that blends so charmingly together is given the proper contrast by correctly mixing with the design blue-gray slate. This is one of the many reasons why the "Penn-Mont" floors and walks have become so popular with architect and builder alike. There is nothing harsh about the coloring in a "Penn-Mont" floor. Slate is selected to give a proper combination of colors for decorative possibilities without the violent clashing of colors which are too strong in tone. "Penn-Mont" floors are always dignified and charming.

There are two types of floors. One the "Penn-Mont" Pocono and the other the "Penn-Mont" Shadowcleft. The "Penn-Mont" Shadowcleft is an irregular design and provides an artistic informal installation well adapted for either interior or exterior use. Its rich blending of hues, charming lines and distinctive texture makes it a leader among materials for installations out of doors. The "Penn-Mont" Pocono is a random rectangular floor. The Pocono design embodies every characteristic of dignity and good taste and represents a popular choice of those seeking both beauty and durability.

For years this company has furnished the architectural profession with only the best grade of structural slate. Now it is possible to obtain certified roofing slate inspected and labeled. Every shipment is protected by the prominent display of the blue and yellow "Penn-Mont" label, which is not only a mark of recognition, but an absolute guarantee of fine quality slate and workmanship. It classifies slate and guarantees that the roof or the floor the architect has selected is in accordance with his specifications in every respect. It is the guarantee of a company whose reputation has been for years and still is jealously guarded. Every piece of "Penn-Mont" slate is selected from our quarries for its quality, texture, color and strength.

With twenty-two active quarries and eighteen branch offices in the United States and Canada we feel that our long experience enables us to render the right type of service. In every branch office throughout the country, district managers and their staff are at your command. At the home office our Engineering Department and Architectural and Engineering Service Department are only too pleased to give your inquiries prompt attention. Layouts, suggestions and photographs of installations will be furnished at any time upon request.

VERMONT STRUCTURAL SLATE CO.

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STRUCTURAL: Base, Border, Cap, Closet Slabs, Cove Base, Fireplace Facings, Fireplace Hearths, Fireplace Mantels, Flooring, Lintels, Louvres, Pedestals, Platforms, Plinths, Quoins, Radiator Tops, Saddles, Shower Stalls, Sills, String, Treads, Troughs, Urinals, Wainscot.

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Special Products: Chemical Agitators, Chemical Vats, Counter Tops, Flower Boxes, Laboratory Sinks, Laboratory Table Tops, Laundry Trays, Sinks, Tanks.

Brief Description of Several Types of Slate Floors

Type A. Fitted rectangles, random pattern, natural cleft face, smooth cut edges, ½-in. thickness, ½-in. cement joint. Setting plan furnished with pieces numbered to correspond. See Color Plate B. Pattern and range of sizes to be indicated by architect or left to us to use one of our standard units.

Note: We can furnish any one color or any combination of colors shown on Color Plates A and B for all specifications.

Type B. Same as A, except 1 in. thick.

Type C. Same as A, except that faces are semirubbed. This finish is recommended where a smooth floor is required, but still retaining the texture of natural cleavage.

Type D. Same as C, but 1 in. thick.

Type E. Same as A, except that faces are to be full sand rubbed. The sand rubbed finish is recommended for floors which may be used for dancing or where extreme sanitation is needed.

Type F. Same as E but 1 in. thick.

Type G. Random rectangles ½ in. thick, natural cleft face, rough sawed edges, set in cement with joint varying from ⅜ to ¾ in., all fitting to be done at the job. Recommended where an uneven or rough joint is desired. Pieces are occasionally slightly out of square and corners are sometimes slightly ragged and broken.

Type H. Same as G but 1 in. thick.

Type I. Trimmed rectangles, ½ or 1 in. thick, random sizes, to be fitted at the job, set in loam or cement, to be used where a rectangular effect is desired and an extremely low cost is required. Not recommended when laid with cement joint.

Type J. Irregular flagging, natural cleft, 1 in. thick, to be fitted at job. Set in loam with grass joints with or without a cinder bed foundation, with the joint ranging from ½ to 1 in.

Style K. Irregular flagging, 1 in. thick, natural cleft, sand rubbed or semirubbed face, set in a cement sub-bed pointed with 3-to-1 cement mortar. Joint ½ to 1½ in. See Color Plate A.

Style L. Standard tile sizes in the sand rubbed or natural cleft finish to be set tight or with a very narrow joint. Specify finish.

Note: Where more formality is necessary, this type of floor can be made up in conventional patterns of one, two or three sizes.

Specify type of floor by letter.

"Ready-fit" flooring in five different designs carried in stock for immediate shipment.

Type of Floor Recommended for Various Installations

Exterior

Walk	B, J, K
Terrace	B, J, H
Loggia	B, J, K
Driveway	B, K
Setback	B, L
Store entrance	A
Flat roof	A, L
Plaza	B, J, K
Court	B, J, K

Interior

Church

Nave	A, C, L
Narthex	A, C, L
Aisle	A, C, L

Interior (Continued)

Residence

Vestibule	A, B
Hall foyer	A, L
Vestibule	A, C
Dining room	A, C, E
Basement	A, B
Sun porch	A, B, C

Miscellaneous

Bank	F, L
Lobby	B, L
Showroom	A, B
Lounge	A
Smoking room	A
Common room	A

Table of Colors

As a guide to the architect in selecting and specifying colors for slate the following designations and descriptions are given. By referring to color plates which have been made by direct color photography from the actual stones the architect can make his own selection of colors. Color plates and samples furnished on request.

Black—Vermont black slate is not a true jet black but rather a dark bluish gray black. After exposure to the weather it fades to a dark brown.

Gray—A plain dark color which forms pleasing contrasts with the brighter shades.

Purple—A strong color which adds life and interest to any floor.

Unfading Green—Ranges from a grayish green to a light strong green.

Light Mottled Green and Purple—A light green slate mottled with purple. In some pieces the purple appears as streaks or veins and in others it is in spots or blotches.

Dark Mottled Green and Purple—A purple slate mottled with green which appears in veins or blotches.

Weathering Green—A greenish slate which can be secured in about four different shades of grayish green. When exposed to the weather slates fade to different shades of yellow to brown.

Red—Varies from a dark purplish red to brick and cherry red.

Buffs and Browns—Are obtained by using weathering green or Vermont black, respectively, and allowing them to fade.

THE VITROLITE COMPANY

Vitrolite—Opaque Structural Glass

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Vitrolite

VITROLITE
"BETTER THAN MARBLE"

Vitrolite, as the foremost opaque structural glass material, is not only in general use for sanitary purposes but has become recognized by the architectural profession as a medium of beauty for many interior and exterior building features.

Because of its practical qualities, together with the fact that its appearance is peculiarly expressive of the modern decorative movement, it is destined to play an important part in the design of buildings of the future.

Vitrolite has kept continually in advance in the development of new colors, construction methods, and decorative processes, and has reached a high degree of perfection and lustre of surface.

Facts About Vitrolite

(More Complete Information Given in "Vitrolite Construction Details")

Nature—Vitrolite is an opaque and impervious fire-polished vitreous slab material known in the building trades as "structural glass." In its manufacture silica sand and various other minerals are fused under tremendous heat, rolled into slabs of various thicknesses and tempered in annealing ovens.

Qualities—Vitrolite is non-porous and non-absorbent, consequently it is impervious to moisture, grease, or even to the effects of all acids except hydrofluoric which is used to etch glass. It is stainproof even after years of service. Its hard, fire-polished surface will never disintegrate and will retain its lustre indefinitely. It will never become marred by surface cracks or crazing. It cannot warp, swell or pull apart. It is very difficult to write or mark upon and any marks that might be made can be easily wiped off. It is particularly easy to keep clean, the stroke of a damp cloth being sufficient in most cases.

The back has a ribbed surface to facilitate fastening with Vitro-cement.

Surfaces—Produced regularly in fire-polished finish, giving a hard, dense surface with a very high polish and beautiful lustre; satin finish furnished in jade, ivory or black only; sandblast surface in various degrees as required; dendric (chipped glass process) surface.

Colors—(See following page.)

Reinforced—Supplied for special purposes in ¾" thickness only, reinforced with expanded metal.

Decorative Processes—Sandblast in tones or patterns of various depths or shaded; sandblast pattern colored with inlaid lacquer or enamel colors, bronze or aluminum and silver or gold leaf; grilles made by sandblasting clear through; mosaic inlay.

Thicknesses—Plain colors $\frac{11}{32}$", $\frac{7}{16}$", ¾", 1", 1¼". White Vitrolite also in ¼" and ½". Agate colors only in $\frac{11}{32}$". For sizes of pieces to use see Vitrolite Construction Details.

Working of Edges, etc.—Edges cut, ground, polished, rounded, mitered or beveled. Vitrolite may be notched, drilled or cut to special shape, but not molded. All exposed edges should be polished and abutting edges ground; edges entirely concealed may be cut only. Vitrolite is sent to job finished to set in place, but can be cut to fit in corners, around pipes, etc.

Installation—Applied to any hard, dry, rigid wall surface, but preferably plaster. Wall coated with waterproof sizing compound. Vitrolite applied with Vitro-cement on interior surfaces and Vitro-mastic on exterior surfaces. Joints sealed and pointed with joint cement. (See Vitrolite Construction Details also Vitrolite Store Fronts and Building Exteriors for more detailed information.)

Uses—Wainscotings, trim, walls and ceilings, bathrooms, kitchens; partitions and wainscoting in toilet rooms and shower baths; operating rooms and various other rooms in hospitals, restaurants, barber shops, markets, laboratories, creameries, mausoleums; store fronts, building exteriors, elevator lobbies, corridors; lunch counters, soda fountains, refrigerator cases, decorative panels; table and counter tops, furniture tops.

Structural Organizations—Located in principal cities in this country and many foreign countries. Expert workmen to make proper installations. Estimates furnished for Vitrolite on structural installations, or for various fixture purposes.

Art Department—Prepares colored sketches for architects, suggesting designs and color schemes for various types of interiors, store fronts, exterior facings, decorated panels, etc.

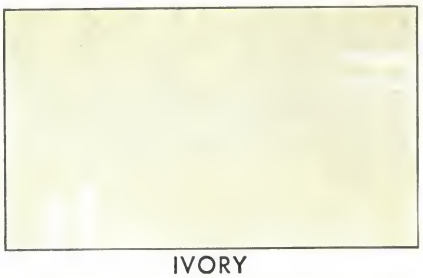
Engineering Department—Prepares working drawings and details and assists architects in developing construction methods and details, especially for new applications.

Vitrolite Literature

To assist the architect to work out projects in Vitrolite and to illustrate the new Vitrolite colors, agate combinations and construction methods, The Vitrolite Company has prepared a number of booklets illustrating its various applications. The architect will find in Vitrolite not only a source of satisfaction because of its service features, but also a fascinating media for creative design. Every architect's office should have the following booklets on file, which will be mailed upon request.

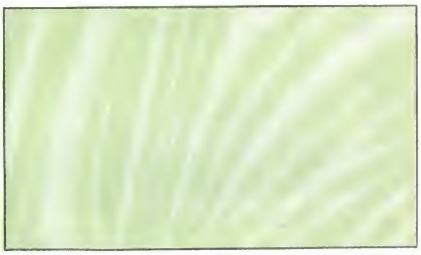
1. **Vitrolite Construction Details.** A 14 page booklet showing construction methods and design suggestions for bathrooms, kitchens, showers, toilet partitions, lobbies, corridors, restaurants, barber shops, store fronts, etc. The only complete technical booklet on structural glass details.
2. **Vitrolite Bathrooms and Kitchens.** A new 16 page booklet illustrating a series of new designs for bathrooms and kitchens, beautifully printed in full colors, using the new Vitrolite colors and agate combinations.
3. **Vitrolite Store Fronts and Building Exteriors.** A new 16 page booklet illustrating the application of Vitrolite to every condition of store front design, also for the facing of entire buildings in combination with metal trim. It shows correct construction methods, also many design suggestions.
4. **Vitrolite Wainscotings for Restaurants.** A booklet of restaurant interiors in full color showing Vitrolite wainscotings and counters. Offers suggestions for use of Vitrolite for many other purposes.
5. **Vitrolite Soda Fountains.** A 16 page booklet in full colors showing a series of designs for soda fountains of Vitrolite, both plain and in combination with metal trim.
6. **Vitrolite Table Tops and Restaurant Accessories.** A booklet showing the latest patterns in Vitrolite table and counter tops, metal and wood table bases, and general accessories for fixture use in connection with the equipping of restaurants and lunch rooms.
7. **Vitrolite Barber Shops.** A folder showing photographs and designs of barber shops with mirror cases, wainscotings and entire walls in Vitrolite.


WHITE

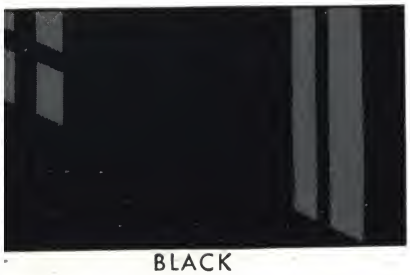

IVORY


JADE

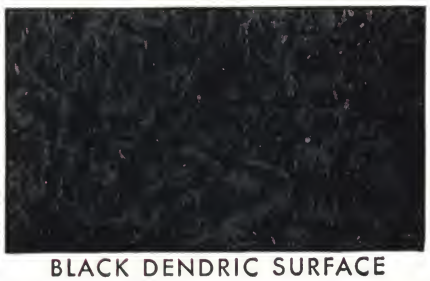

GRAY


JADE-AGATE


ORCHID


BLACK


ORCHID-AGATE


BLACK DENDRIC SURFACE


EMERALD-AGATE


WALNUT-AGATE


GOLDEN-AGATE


BLACK TWO-TONE SANDBLAST


BLACK COLORED DECORATION


BLACK SHADED SANDBLAST

COLORS AND DECORATIVE PROCESSES

This chart illustrates standard Vitrolite colors and the principal decorative processes. The agate colors will show a considerable variety in the veinings. Samples will be furnished upon request

THE VITROLITE COMPANY

120 South La Salle Street « » « » « » CHICAGO, ILLINOIS

THE NURRE COMPANIES, INC.

HOME OFFICE AND PLANTS 1 AND 2
BLOOMINGTON, IND.

BRANCH PLANTS

BURLINGTON, IOWA | ST. LOUIS, MO. | KANSAS CITY, MO. | MEMPHIS, TENN.

REPRESENTATIVES IN ALL LARGE CITIES

NURALITE
BEAUTY WITH PERMANENCE

Nuralite—Nuralite is a highly polished, hard surfaced, vitreous structural glass made from rock ingredients and fused under tremendous heat, being rolled flat while in a plastic state. This insures an absolutely non-porous material, guarding entirely against the absorption of odors and moisture. It possesses unusual beauty, great tensile strength, does not discolor, deteriorate, craze, or fade, keeping its highly polished surface indefinitely. Variations in climatic conditions have no effect on Nuralite, neither do chemical compounds or gases in the atmosphere affect its freshness, color, or sheen. The surface of this material will not stain and is not affected by acids (except Hydrofluoric acid which is used to etch glass). Its surface will last indefinitely, and, accordingly, it is never necessary to refinish Nuralite. Owing to the highly polished surface, a damp cloth will quickly remove all grit and dirt and restore its original lustre. Its original cost, therefore, is the only cost. For lasting permanence with beauty and low cost, choose Nuralite.

Textures and Colors—Nuralite is available in various surface textures and all sizes. The Nurre Companies do not encourage the use of Nuralite in large panels except in the heavier thicknesses.

One of the prominent advantages of Nuralite is the fact that it is obtainable in many plain and variegated colors. It can be secured in subdued pastel shades of variegated cream, orchid, peach, green, rose gray and blue. In addition, solid colors are available in old ivory, pea green, olive green, blue, gray, black, and white. Every conceivable harmonious blending of colors is possible with Nuralite. By using the variegated material it is possible to effect color combinations which have never before been seen in any decorative material, and the permanence of these colors insures lasting beauty.

Application—Nuralite is recommended for wainscoting, ceilings, bulkheads, table tops, window seats, shelving, and numerous other purposes. It is ideal for bulkheads and pilasters where not only beauty, but also sanitation, cleanliness and durability are prime requisites. This material can be installed directly over old plaster in remodeling work, eliminating the usual muss incident to work of this type as well as eliminating further maintenance cost. Plain colors are furnished in all thicknesses. Variegated material is available only in various thicknesses up to and including three-fourths inch.

Service—We maintain an Engineering Department at our home office and urge that you do not hesitate to make use of this department in connection with your structural glass problems. Write for copies of specifications and samples of plain or variegated Nuralite from the plant nearest you.





Home Uses (Top Left)—There are many uses for Nuralite in the home. Here the many color schemes to match plumbing fixtures and furniture find ready acceptance in bathroom, kitchen, lavatory, and hallways.

Store Fronts (Top Right)—It is economy, pure and simple, to use Nuralite for store front veneer. No painting or refinishing. No wearing away due to heat, wind, rain, or other atmospheric conditions. A damp cloth removes all dust and grime and restores the original gloss and lustre.

Sanitary Uses (Right) Nuralite is one of the most sanitary materials made. There are places in every building project where sanitation is absolutely essential, such as toilet rooms, wash rooms, shower rooms, cafeterias, restaurants, bakeries, and many other rooms. Nuralite plays its part here. Dirt, grime, or germs of any kind cannot become imbedded in Nuralite. Its non-porousness precludes this possibility. Wipe it with a damp cloth and cleanliness is restored. The installation reproduced here is the men's toilet room in the new Union Memorial Building at Indiana University, including toilet compartments and partitions.



ROBINSON FLAGSTONES

(J. G. ROBINSON, INC.)

Rittenhouse and Pulaski
GERMANTOWN, PHILADELPHIA, PA.

Samples and Displays at each Agency and at the New York Office at 101 Park Avenue

Robinson Northern Flagstone

Robinson Northern Flagstone is a natural cleft material (not sawed) from the Wyoming Valley region of Pennsylvania. It is suitable for exterior and interior use.

The colors vary from the grays, buffs, rusts, browns and purples, giving a soft pastel effect free from sheen. Natural weathering adds to the unusual color combinations.

We are constantly studying and experimenting with flagstone in securing architectural effects and co-operating with architects in obtaining the spirit and charm of old world beauty.

We recommend 1 in. for cement and 1¼ to 1½ in. for dirt. Heavier material can be furnished for treads and coping.

Robinson Southern Flagstone

Robinson Southern Flagstone comes from Crab Orchard, Tennessee, and is a quartzite, light buff tone predominating in sunset hues. This is used for the same purposes as the northern flagstone and is particularly satisfactory in formal surroundings and in combination with marbles, limestone, granite, and other formal materials.

Robinson cleftstone roofs furnished for larger residences and country clubs.

Recent Installations of Interest

Various groups at Harvard University, Coolidge, Shepley, Bulfinch & Abbott, Architects; Sterling Dormitory, Yale University, James Gamble Rogers, Architect; Government Work (Internal Revenue, Department of Commerce and Agricultural Buildings); Northeastern Federal Penitentiary, Lewisburg, Pa., Hopkins & Dentz, Architects.



Nevil Memorial Church of St. George, Haverford, Pa.
FRANK R. WATSON, EDKINS & THOMPSON, Architects



Jones Beach, Wantaugh, L. I., N. Y.
W. EARLE ANDREWS, Architect



Folger Shakespeare Library, Washington, D. C.
PAUL P. CRET, Architect



Estate—Westhampton Beach, L. I., N. Y.



Approach to the Tomb of the Unknown Soldier, Arlington, Va.
LORIMER RICH, Architect



Sunken Gardens, Nemours, Del.
MASSENA & DUPONT, Architects

*AMBLUCO NON-SLIP BLUE STONE STAIR TREADS AND FLOORING

QUARRIES AND MILLS
AMBLUCO, WYOMING CO., N. Y.

Produced by
AMERICAN BLUE STONE COMPANY
101 Park Avenue, NEW YORK, N. Y.

Products

AMBLUCO NON-SLIP STAIR TREADS and LANDINGS for interior steel and concrete stairways; AMBLUCO FLOORING, THRESHOLDS and WALL BASE for interior and semi-interior uses.

For Genesee Valley and "North River" Blue Stones for exterior uses, and *Naturcleft Flagging, see Manufacturers' Index.

*Reg. U. S. Pat. Off.
"A Product with a Real Guarantee"

Facilities

This company has well developed quarries on its own property of about 200 acres, located at Ambluco, Wyoming County, N. Y. The mills and yards are equipped with the most modern machinery so that large volumes of business can be handled without delay.

One building 150 ft. long, devoted exclusively to the storing and finishing of AMBLUCO Products is heated during the cold weather so that orders can also be filled in the winter.

Ambluco Non-slip Stair Treads and Landings

These treads and landings have established themselves wholly on their own merits, with practically no introduction on our part. By those who have studied their qualifications or used them, they are declared to be superior to and more economical than any other type.

Attractive Color and Texture—Uniform color, even grained texture and standard sand sawed finish (free from saw marks and imperfections) give a splendid appearance. The distinctive light-blue shade blends well with adjacent light color surfaces or gives a sharp clean contrast with dark material. It is a fine, close grained blue stone, made up mostly of pure, hard quartz as shown below:

MINERALOGICALLY CONSIDERED

Fine, hard sand, mostly quartz	70%
Clay, as binding material	28%
Water	2%

Non-slip—The non-slip property, due to the fine grained quartz, does not grip the foot to cause tripping, but gives ample security against slipping at all times, whether wet or dry, without requiring resurfacing or replacing. These quartz particles are always uniformly distributed throughout the entire stone, a condition that is only produced by nature and prevents the surface from ever wearing smooth.

Durable—The extreme durability of the AMBLUCO Treads comes from the character of the material and the steadily increasing hardness of the stone brought on by the heat of the building, causing the treads to resist wear as they age. The density of the stone's structure which helps to give the remarkable wearing quality is revealed comparatively in the following table:

CRUSHING STRENGTH

Rockport granite (Kidder's Hand Book)	17,750 lb. per sq. in.
Vermont marble	13,500 lb. per sq. in.
Genesee Valley blue stone	19,970 lb. per sq. in.

This blue stone weighs only, approximately, 150 lb. per cu. ft. (or 25 lb. per sq. ft. 2 in. thick) when cut ready to set.

Sanitary—AMBLUCO Non-slip Treads and Landings are easily kept sanitary. Their great hardness prevents generation of dust and permits clean sweeping and mopping. The flat, non-porous surface has no grooves or pores to collect filth and disease germs. The soffits may be painted without danger of the stain coming through the stone to the top surface.

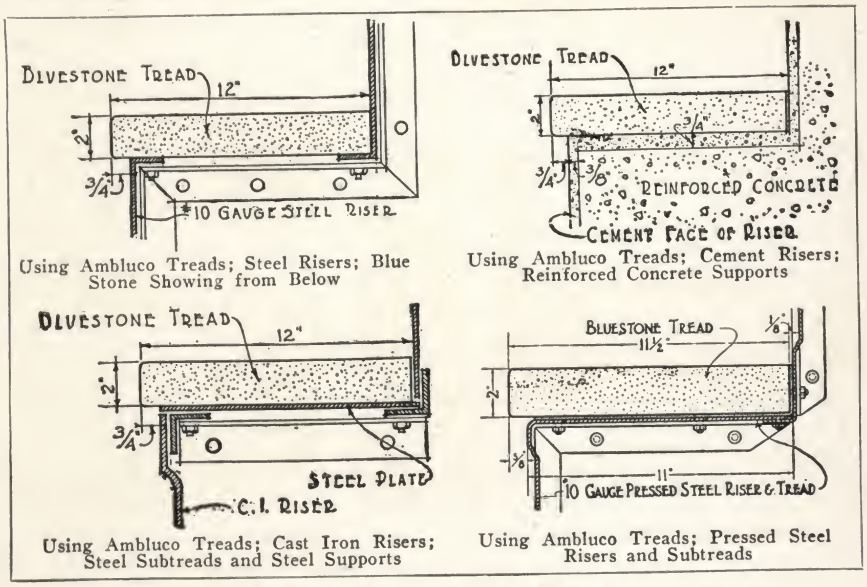


Ambluco Stair Treads, Hartford (Conn.) Fire Insurance Co. Building
PARKER, THOMAS & RICE, Architects
MARC EIDLITZ & SON, Contractors

Quiet—They are practically noiseless and do not resound from footsteps nor become loose and rattle. This quiet feature is a truly essential quality for most buildings, and especially for hospitals where many human beings are undergoing great suffering, and for schools where it is so important that the pupils' minds are not distracted from their work.

Fire Resisting and Rust-proof—The AMBLUCO Treads and Landings offer great resistance to extreme heat and are of inestimable value in fireproof construction. In contrast to many other treads these AMBLUCO treads do not become rusty themselves nor stain other adjacent materials.

Permanent and Economical—"Lasts the life of a school" is a fitting slogan, for, as indicated by tests and



Using Ambluco Treads; Steel Risers; Blue Stone Showing from Below

Using Ambluco Treads; Cement Risers; Reinforced Concrete Supports

Using Ambluco Treads; Cast Iron Risers; Steel Subtreads and Steel Supports

Using Ambluco Treads; Pressed Steel Risers and Subtreads

Details of Ambluco Stair Treads

reputed records, AMBLUCO Non-slip Treads give satisfactory service in an average school for 50 to 60 years, while observance shows that at the existing rate of advancements in scientific design and construction, a school is considered obsolete in that length of time and is frequently replaced by a new building. In fact, there are records where these blue stone treads have been removed in the wrecking of a school and the same treads later installed in a new school.

The initial cost of the AMBLUCO Treads (1½ in. to 2 in. thick) is about the same or less than other natural stone treads and the ultimate cost much less even than the cheap metal and composition treads.

The facility with which they can be set on the regular types of fabricated or pressed steel stair construction eliminates the great expense of specially designed steel members.

No maintenance cost is necessary after these blue stone treads are properly installed.

As a matter of fact, the AMBLUCO Treads and Landings can be safely adopted without first experimenting.

Specification Suggestions—AMBLUCO Non-slip Treads and Landings should be called by their trade-name, and although in many localities this name is well known, we suggest also (to avoid substitution of inferior stones) requiring that they are stenciled AMBLUCO and stating that they are produced by the American Blue Stone Company, New York, N. Y.

The sand sawed or wet sand rubbed are the only two finishes which should be allowed. The former has proved entirely satisfactory and we endorse it as a standard. Planed and axed surfaces should be avoided.

AMBLUCO Treads and Landings are universally used 2 in. thick, but can be furnished down to 1½ in. Complete specifications will be supplied upon application.



Ambluco Flooring, Base, Treads and Risers, Alumnae Hall, Vassar College, Poughkeepsie, N. Y.
HUNT & HUNT, Architects

Accepted as Standard by Prominent Users—Subsequently to the standardizing on the AMBLUCO Blue Stone Treads by the City of Boston and its many suburbs in their schools and other public buildings, nearly all the rest of New England, recognizing the superior features of these treads, did likewise. Many of the leading school architects in the Eastern, Southern and Middle Western States specify them. The use has not been confined to schools, but has also been extended to other public buildings, such as hospitals, museums, colleges, churches, clubs, railroad stations and high class commercial buildings.

Also AMBLUCO installations are frequently made to replace worn-out treads of other kinds.

AMBLUCO Treads and Landings are used, for the most part, by architects and engineers long accustomed to incorporating in their specifications the best material for their work.

A Few Ambluco Tread and Landing Installations

Girls' Continuation School, Boston, Mass., Joseph J. Driscoll, Architect
Essex County Sanitarium Buildings, Verona, N. J., Sutton & Sutton, Architects
Taft Upper School, Watertown, Conn., James [illegible] Rogers, Architect
New York State Teachers' College, Buffalo, N. [illegible], William E. Haugaard, Architect
Cook Dormitory, University of Michigan, Ann Arbor, Mich., York & Sawyer, Architects
St. Joseph's Normal Institute, Barrytown, N. Y., James W. O'Connor, Architect
Brookline High School, Boston, Mass., Kilham, Hopkins & Greeley, Architects
Columbia High School, South Orange, N. J., Guilbert & Betelle, Architects
St. Boniface R. C. School, Sea Cliff, L. I., N. Y., Jas. W. O'Connor, Architect
Homeopathic Hospital, Providence, R. I., Kendall Taylor & Co., Architects
Lehigh Valley Railroad Station, Easton, Pa., J. J. McCleece, Architect
Federal Reserve Bank, Boston, Mass., R. Clipston Sturgis, Architect
Liberty Telephone Exchange, Boston, Mass., Parker, Thomas & Rice, Architects

Ambluco Blue Stone Flooring, Thresholds, Wall Base, and Swimming Pool Coping

In these days of the exacting of high liability for accidents to mankind, the fundamental requirement in flooring is that it does not become slippery under any conditions. In this blue stone flooring, quartz, the essential constituent, being harder than the accessory minerals, is pre-eminent on the wearing surface at all times and makes the floor slip-proof and very durable. Besides the rust-proof, non-porous, dustless and sanitary qualifications of this flooring, it is quiet to walk on.

AMBLUCO Flooring is either 1½ or 2 in. thick and is especially suitable for interior and porch floors in both regular and irregular designs, suggestions of which are shown on the following page. In case of an irregular pattern, it is advisable for economy to limit the number of sizes to about seven. If, however, a greater variety of sizes and shapes is desired, random sawed slabs may be shipped from the quarries, and then fitted and jointed by local cutters on the job. Joints of ⅛ to ¼ in. are usually used for the regular styles and ¼ to ½-in. joints are more in keeping for the irregular style floors.

Its sawed or rubbed finish gives a level surface on which chairs and other furniture do not rock, a feature so annoying with natural split stone.

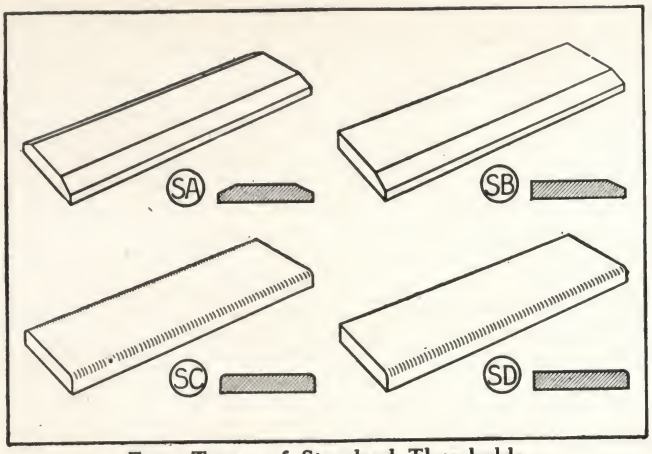
Other delightfully artistic effects are gained by several methods. One, by varying the finishes—having some pieces sawed with sand and some with steel shot. Another, by omitting the washing of the stone after sawing, which gives a variegated coloring from the rust stain of the saws.

For interior swimming pools it is claimed to be in a class by itself for the border flooring and coping, for it is not dangerously slippery, does not injure the bare feet, and does not deteriorate and necessitate frequent replacements as do some manufactured floorings.

AMBLUCO Flooring is especially appropriate for,

and is being used extensively in churches, cathedrals, museums, libraries, clubs, hotels, railroad stations, residences, high class commercial buildings, and the vestibules and stair halls of hospitals, schools and college buildings.

Perhaps in no place is there greater and more noticeable wear than in thresholds or saddles, and therefore, for this purpose, this AMBLUCO non-slip sand rubbed product is unapproached. These are furnished 1¼ to 2 in. thick by the desired widths, and with a choice of bevels.



Four Types of Standard Thresholds

The AMBLUCO Wall Base and Plinths should be used to match the flooring and thresholds, landings and treads. The base and plinths are 1¼ to 2 in. thick by 7 to 14 in. high. A ⅛-in. radius round on the top front arris is usually given or a slight bevel is occasionally applied.

A fine sand rubbed finish is most appropriate, although the sand sawed finish frequently harmonizes better with certain styles of wall.

Specification Suggestions—It is important that this flooring, thresholds and base are specified by trade-name as described under the AMBLUCO Non-slip Treads.

For Flooring—The vestibules, lobbies, lounges (or whatever places desired) shall be of AMBLUCO Blue Stone, 2 in. [1½ in.] thick laid in regular [semi-irregular] [irregular] design (if irregular describe idea) with ¼-in. [½-in.] joints. It shall be set over a concrete fill and set in, at least 1 in. of mortar composed of 2 parts sand and 1 part portland cement. The joints shall be neatly pointed flush with surface of floor with same mortar, to which shall be mixed enough lamp black or other coloring to produce the desired effect.

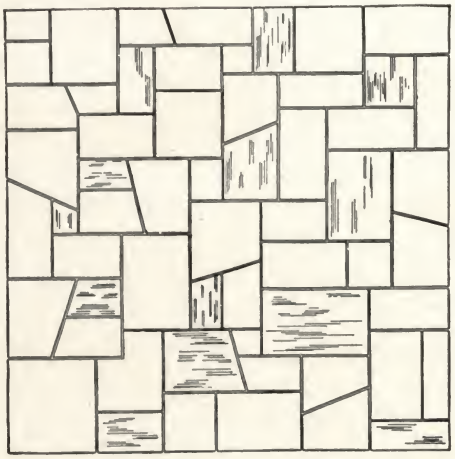
For Thresholds or Saddles—All interior doorways for (.....) floors where cement, terrazzo or tile floor is used on either side, shall have AMBLUCO Non-slip Blue Stone saddles 2 in. [1¼ in. to 3 in.] thick by the full thickness of the partition wall in width, and the full width of the opening in length, with sand rubbed finish and 1x¼ in. deep bevel on each side. Joiner strips of AMBLUCO Blue Stone 1½ in. thick by 8 to 10 in. wide shall be used wherever different types of floor meet.

Typical Ambluco Flooring, Base and Threshold Installations

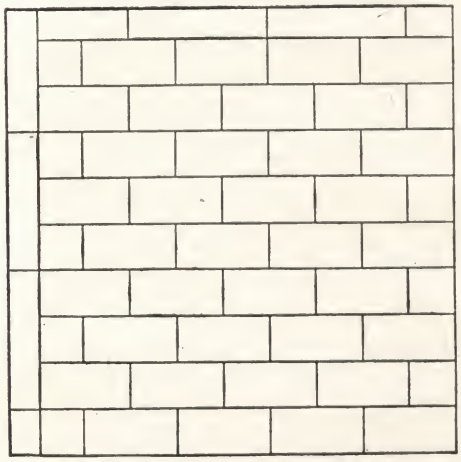
Museum of Fine Arts, Boston, Mass., Guy Lowell, Architect
Cathedral of Incarnation, Baltimore, Md., Bertram G. Goodhue, Architect
Christ Church, Bronxville, N. Y., Bertram Goodhue Associates, Architects
University of Maine Arts & Science Building, Orono, Me., Crowell & Lancaster, Architects
Baker Chocolate Co., Dorchester, Mass.
Dr. Walter Timme's Art Wing, Cold Spring, N. Y., John W. Ingle, Architect.
Carl Weeks Residence, Des Moines, Iowa, Rasmussen & Wayland, Architects.
Church of the Redeemer, Morristown, N. J., Parish & Schroeder, Architects

Suggestions for Care of Ambluco Products

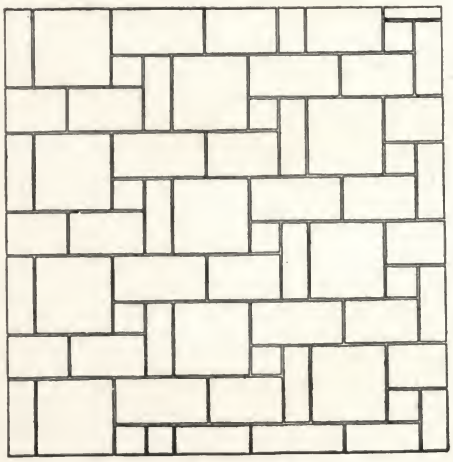
After AMBLUCO Treads, Landings, Flooring, etc., have been installed they should be thoroughly scrubbed with sand and water until clean. No acid or other damaging substances should be used. If the light blue color is desired, coat with one or two applications of Truscon's Super Por-Seal. Repeat this six to eight times a year if needed. If it is preferred to have a darker shade, scrub and then paint with raw linseed oil. This can be done as often as will give the best results.



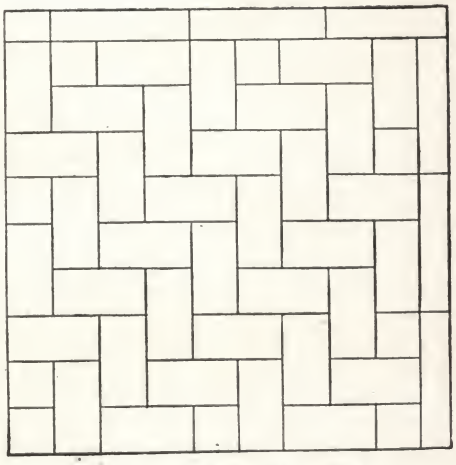
Irregular Design—FD
Random size blue stone slabs, showing variegated effect by combining sand sawed and shot sawed finishes. Laid with broken ½-in. joints



Regular Design—FA
Oblong blue stone slabs 24x12 in. laid with straight joints and transverse joints uniformly broken. Border of blue stone 8 in. wide



Semi-irregular Design—FC
Five different size blue stone slabs laid to a pattern with broken ¼-in. joints



Semi-regular Design—FB
Oblong blue stone slabs laid herringbone. Border of blue stone 8 in. wide

Suggested Designs for Ambluco Flooring

PAINT, PAINTING AND FINISHING

ESTABLISHED 1835

THE AMERICAN CRAYON COMPANY

Manufacturers of "Permatite"—A Penetrating Varnish (An "Old Faithful" Product)

SANDUSKY, OHIO

BRANCH OFFICES

NEW YORK, N. Y., 200 Fifth Avenue — DALLAS, TEX., Santa Fe Building — SAN FRANCISCO, CALIF., 116 New Montgomery Street

"PERMATITE"—THE PERFECT FINISH FOR EVERY HARD SERVICE CONDITION

Products

"PERMATITE"—the modern Wood Sealer and Finish for floors, trim and furniture.

Also manufacturers of "Trazatite," a terrazzo sealer and finish; "Filtite," a cement sealer and finish; "Kay-Wax," liquid and paste wax; "Kay-Brite," a liquid wax that dries with a shine.

"Old Faithful" Crayons, Water Colors, Pencils, Ink and Paste.

Research and Approval

The different hardwood flooring associations have made separate researches to develop a good heavy duty, hard service floor finish. Old methods used in the past were primarily designed for vertical surfaces and have never been satisfactory when receiving the direct wear to which floors are subjected. The flooring associations wanted a finish that would stand the scuffing of heels without cracking and scaling off. Furthermore, traffic lanes through doors, etc., always presented a problem, the ideal sought by the associations being a finish that could be patched in these places of excessive wear without resanding and refinishing the entire floor.

The real need was recognized for such a finish suitable for hardwood floors in schools, stores, factories, offices, clubs and similar types of buildings where floors receive excessive wear and are expected to appear attractive in keeping with their surroundings. "Permatite" met these conditions.

"Permatite" is the original and only emulsified penetrating varnish free from wax that dries bone dry and which may be polished by friction, or that has a record of successful use for a period of seven years.

The remarkable quality possessed by "Permatite" of bringing out the full beauty of the grain and the fact that it need never be refinished, but can be repolished with one application of "Permatite" as often as wear requires, are some of the reasons for its universal acceptance.

These associations approved of "Permatite":

Maple Flooring Manufacturers' Association—their circular, "Heavy Duty Finishes," June, 1930.
Oak Flooring Manufacturers' Association of the United States—their Data Sheets No. 16 and No. 19, 1930.
The Southern Oak Flooring Industries—their Data Sheet D-5101 and booklet "How to Lay Oak Floors," June, 1931.

"Permatite" Qualities

Because of its fire resisting qualities, its ability to withstand hard usage, the ease with which it may be maintained or repaired, and being non-slippery, it finds favor for schools, public buildings, apartment houses and stores, as well as for the finest residences.

"Permatite" has real value as an under or back coating for it has great resistance to moisture—in fact, four times that of an equal number of coats of linseed oil.

"Permatite" will not show laps. It produces a finish which is most easily cleaned—fine steel wool removes spots and all surface accumulations, leaving the finish in its original condition, uninjured.

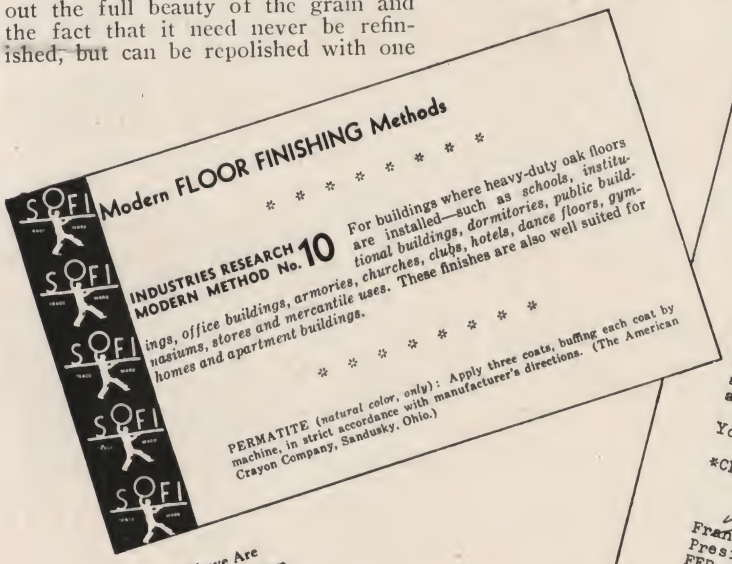
Cost of Application

For the reason that the use of "Permatite," either colored or uncolored, does away with the necessity of a stain coat and of a shellac coat, and for the added reason of its economy of application, the cost of finishing with "Permatite" is less than for a first class job finished in the ordinary way.

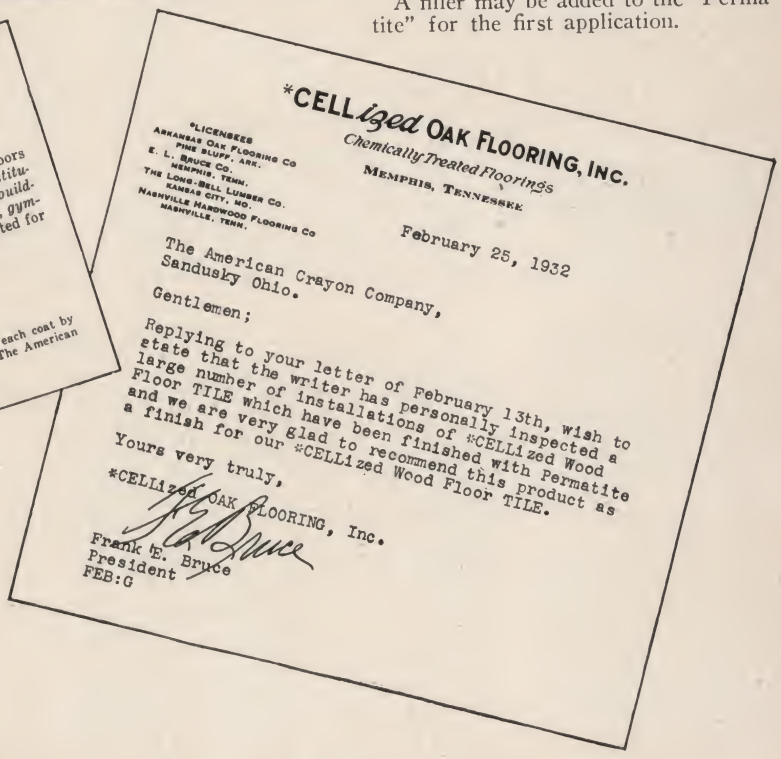
Covering Capacity

"Permatite" spreads under average conditions 300 sq. ft. per gallon, with 3 applications.

A filler may be added to the "Permatite" for the first application.



The Above Are Extracts taken From The Booklet "How To Lay and Finish SOFI Oak Floors", Published by the Industries Research Division - Southern Oak Flooring Industries.


*CELLized OAK FLOORING, INC.
Chemically Treated Floorings
MEMPHIS, TENNESSEE
*LICENSEES
ARKANSAS OAK FLOORING CO
PINE BLUFF, ARK.
E. L. BRUCE CO.
MEMPHIS, TENN.
THE LONG-BELL LUMBER CO.
KANSAS CITY, MO.
NASHVILLE HARDWOOD FLOORING CO
NASHVILLE, TENN.
February 25, 1932
The American Crayon Company,
Sandusky Ohio.
Gentlemen;
Replying to your letter of February 13th, wish to state that the writer has personally inspected a large number of installations of *CELLized Wood Floor TILE which have been finished with Permatite and we are very glad to recommend this product as a finish for our *CELLized Wood Floor TILE.
Yours very truly,
*CELLized OAK FLOORING, Inc.
Frank E. Bruce
President
FEB:G

CONTINENTAL CAR-NA-VAR CORPORATION

(FORMERLY CONTINENTAL CHEMICAL CORPORATION OF WATSEKA, ILL.)

Compounds for Conditioning and Maintaining All Types of Floor Surfaces

BRAZIL, IND.

OFFICES AND WAREHOUSES

*BOSTON, MASS.	*DENVER, COLO.	*INDIANAPOLIS, IND.	NASHVILLE, TENN.	*PITTSBURGH, PA.	*SEATTLE, WASH.
*CHICAGO, ILL.	*DES MOINES, IOWA	*KANSAS CITY, MO.	*NEW ORLEANS, LA.	*RICHMOND, VA.	*ST. LOUIS, MO.
*CINCINNATI, OHIO	*DETROIT, MICH.	*LOS ANGELES, CAL.	*NEW YORK, N. Y.	*SAN ANTONIO, TEX.	TAMPA, FLA.
CLEVELAND, OHIO	*GREENVILLE, S. C.	*MILWAUKEE, WIS.	*OKLAHOMA CITY, OKLA.	*SAN FRANCISCO, CAL.	*TORONTO, CAN.
*DALLAS, TEX.	*HOUSTON, TEX.	*MINNEAPOLIS, MINN.	*PHILADELPHIA, PA.	*SALT LAKE CITY, UTAH	*WASHINGTON, D. C.

*Warehouse stocks

Tri-C Products

Tri-C products comprise a complete line of treatments for conditioning and maintaining all types of floors. They are made from formulæ resulting from years of experience and scientific study, by special processing machinery which insure perfect emulsions and result in superior products. Approved by leading floor manufacturers.

Manufacturing Facilities

We have been manufacturing floor treatments for many years and are, today, the largest manufacturers in the world specializing in floor treatments for large floor areas. Our large modern factory covering 100,000 sq. ft. of floor space provides a manufacturing capacity of over two million gallons annually. The company is incorporated for $1,000,000.00 and enjoys the highest credit rating.

Service Facilities

Our staff of over 100 floor engineers are factory trained, not only in the use of Tri-C products but in the composition and characteristics of all types of floors. These engineers are located in principal cities throughout the country and are ready to co-operate at all times with the architect and contractor. (See list of offices and warehouses above.)

Further Information

Our Special AIA folder (AIA25B1) as well as "Floor Engineering" and our "Checkup Chart" for maintenance costs will be found of value. Any one or all of these will be sent upon request.

TRI-C FLOOR TREATMENTS

Car-Na-Var

A mop-applied liquid containing vegetable waxes, including carnauba, and a waterproof varnish gum, perfectly dispersed by a special process. It dries almost immediately and forms a hard but pliable coating of great durability, which, when rubbed, resembles a fine varnish finish. Its hard surface is impervious to ordinary dust and traffic, is readily swept clean and requires only an occasional damp mopping to remove stubborn stains.

Car-Na-Var is suitable for treating practically all types of floors except rubber, marble, asphalt and light colored terrazzo. It is supplied in "Natural" (stainless) and in Dark Oak, Light Oak, Walnut, Cherry, Mahogany, Maroon, Green and Mission.

Continental "18"

(Also called Luster-Var)

A liquid bright-drying finish for many kinds of floors, especially rubber, tile, terrazzo, asphalt and linoleum. The base is a high grade carnauba wax and a gum; prepared as a special floor treatment emulsion having a water solvent. Contains 18% solids. Dries with a satin-like finish in from 10 to 15 minutes, requiring no polishing. It is non-slippery, economical, long wearing and water resisting.

Rubber-Var

A waterproof liquid emulsion made of varnish gum and waxes with an aqueous thinner. Applied with mops and buffed to high polish. It should not be confused with the water waxes as it does not wash off. Especially suitable for use on rubber, terrazzo, masonite and marble floors. It is easily cleaned, eliminates the need of frequent scrubbings and when repairs are made, shows no overlaps.

Flor-Fil

A paste containing finely ground silex held in a vehicle sufficiently volatile to dry in 2 to 4 hours. Leaves only a cement residue which combines with the silex and fills the cavities of the surface with a permanent, adhering solid. Furnished in "Natural" (stainless) and same colors as Car-Na-Var.

Seal-Var

A preparation of not less than 14% of gums held in semi-liquid form by volatile thinners. Dries hard in about 4 hours and is used as a seal on porous floors preceding Car-Na-Var, Continental "18" or Rubber-Var.

Clean-O-Shine

An amber colored, semi-liquid neutralizer and cleanser with a pure linseed base having an approximate neutral solid content of 22%. Approved as a cleaner by the Linoleum Association and others.

Nu-Tro-Fil

Similar to Clean-O-Shine but has greater solid content of sizing gums and preservatives. Warranted in the better class of work.

De-Ter-Go

A cleaning powder which is sprinkled over the wet floor and allowed to stand until dissolved. Scrubbing or mopping then removes the oil and dirt from the floor providing a thoroughly clean surface for treatment. It can be freely handled yet, in proper proportion, is powerful enough to remove paint and varnish. It is also suitable for cleaning rubber floors.

Maintenite

A cleaning powder especially for rubber floors. Milder than De-Ter-Go and recommended by Rubber Manufacturers Association, Inc.

Silent Chief

A powerful, silent electric floor machine of highest efficiency. Safety switch. Sizes 15 in. and 18 in. Manufactured and guaranteed by us. Polishes, scrubs, sands, etc.



Silent Chief Floor Machine

WHAT TO USE CHART

Type of floor	Clean with	Fill with	Treat with	Maintain with
Asphaltic tile	Clean-O-Shine	.....	Continental "18"	Continental "18"
Concrete	Clean-O-Shine	Seal-Var	Car-Na-Var or Continental "18"	Car-Na-Var or Continental "18"
Cork carpet	Clean-O-Shine	Seal-Var		
Cork tile	Clean-O-Shine	Seal-Var		
Linoleum—new	Clean-O-Shine	.....		
Linoleum—old	Clean-O-Shine	Seal-Var		
Magnesite	Clean-O-Shine	Seal-Var		
Marble	Nu-Tro-Fil	.....	Rubber-Var	Rubber-Var
Mastic	Clean-O-Shine	.....	Continental "18"	Continental "18"
Masonite (Prestwood)	Nu-Tro-Fil	.....	Rubber-Var	Rubber-Var
Rubber	Maintenite or De-Ter-Go	.....	Continental "18" or Rubber-Var	Continental "18" or Rubber-Var
Slate	Clean-O-Shine	Car-Na-Var		
Terrazzo	Nu-Tro-Fil	Rubber-Var		
Tile—unglazed	Clean-O-Shine	.....	Car-Na-Var	Continental "18"
Wood—hard—old	De-Ter-Go	Seal-Var	Car-Na-Var or Continental "18"	Car-Na-Var or Continental "18"
Wood—soft—old	De-Ter-Go	Seal-Var		
Wood—new (closedgrain)	Clean-O-Shine	Seal-Var		
Wood—new—oak (open grain)	Clean-O-Shine	Flor-Fil and Seal-Var		

FLOOR TREATMENT SPECIFICATIONS

General Application and Finish of Treatment

General—All material shall be applied in strict accordance with the manufacturer's printed directions to suit the particular flooring material.

Mop Application—Materials shall be "mop-applied" with the following types of mops:

Lamb's Wool—Tri-C Lamb's Wool Mops.

No. "18" Applicator.

Cotton String—Cotton string mops shall be of two lengths with a head 6 in. wide and strands about 15 in. and 20 in. long respectively.

Mop application shall, in general, be made with a lamb's wool mop, except for the application of *(Clean-O-Shine) (Nu-Tro-Fil) (Continental "18").*

Note: Continental "18" must not be rubbed until dry.

Polishing—Polishing, where specified, shall be done with a *(Tri-C Silent Chief) (a heavy)* electric polishing machine. On porous floors where polishing is done before the treatment is completely dry, use a fibre brush and finish with a soft (Tampico) brush. If treatment has been applied too thick and brush waves appear, use mat of clean "0" or "00" steel wool beneath weight or brush and repolish or rub out waves with burlap.

Note: A Tri-C Silent Chief Polisher is advocated, see preceding page.

(1) Wood Floors

Note: The treatment for close grain woods, such as maple, beech and birch, varies from the treatment of open grain woods, such as oak, to the extent that the filler is not needed on the close grain woods. If the floor is stained with dye, paints, oils, etc., such stains should be removed by the flooring contractor.

(1a) Clean floors of all stains, dust or other foreign matter. (Succeeding treatments are all transparent.) If grain is raised, sand to smooth finish.

(1b) Apply Tri-C Flor-Fil with paint brush or lamb's wool mop. Rub thoroughly *across* the grain with mop or rag. When Flor-Fil "sets" (turns dull in appearance) rub floor *across* the grain until all Flor-Fil surplus is removed from the surface. Do not rub with the grain. Let completely dry. (If floor is to be stained, use Flor-Fil of color selected.)

(1c) Apply coating of Seal-Var with lamb's wool mop. Rub out well but exercise care to cover the surface completely. Seal-Var should be let dry for four hours, then rubbed with clean steel wool, removing surface gloss. (If floor is to be stained, use Seal-Var of color selected.)

(1d) Apply one (1) or two (2) coats of *(Car-Na-Var) (Continental "18") (if Car-Na-Var specify either "Natural" or color wanted).* When dry, polish each coat thoroughly.

(2) Masonite Cushioned Flooring

Note: If floor is dirty clean by scrubbing with a solution of Nu-Tro-Fil or Clean-O-Shine (approximately ½ pint to a bucket of water.) Squeegee suds from floor and then remove all soap residue with clear water mopping.

When floor is dry apply thin coat Rubber-Var with Lamb's Wool Mop. When dry polish with weighted buffer or electric polishing machine. If desired finish is not attained, apply second coat of Rubber-Var, allow to dry, and polish as outlined above.

(3) Linoleum, Cork Tile, and Cork Composition Floors

(3a) Clean floors free from dust or foreign matter.

(3b) Linoleum—Clean with solution of *Clean-O-Shine* to neutralize alkali or free surface oil, rinse and dry mop. Finish with two (2) thin coats of *(Car-Na-Var, Natural) (Continental "18"). (When dry, polish each coat thoroughly.)*

Note: Buffing may be omitted on Continental "18" if desired.

(3c) Cork Tile—Apply one (1) coat of Seal-Var. When dry, finish with two (2) coats of *(Car-Na-Var, Natural) (Continental "18"). (When dry, polish each coat thoroughly.)*

Note: Buffing may be omitted on Continental "18" if desired.

(3d) Cork Carpet.

Note: Treat same as cork tile except that due to its softer, more porous composition, it may require one additional coat of Car-Na-Var or Continental "18."

(4) Asphaltic Base Composition Floors

(4a) Clean floors free from dust or foreign matter with *(Clean-O-Shine) (Nu-Tro-Fil).*

(4b) Troweled-On Finish—Apply one (1) coat of *(Car-Na-Var, Natural) (Continental "18")* which when dry, polish with a soft (Tampico) brush. If using an electric machine, guard against allowing machine to operate in one spot long enough to create sufficient heat to soften the floor.

(4c) Asphaltic Tile—Finish with two (2) coats of Continental "18." When dry, polish each coat with a soft (Tampico) brush.

(5) Rubber Floors

Note: Do not apply treatment until several days after installation, to allow the setting cement to thoroughly harden.

(5a) Clean floors free from dust or foreign matter.

(5b) Mop the floor with a solution of Maintenite. Do not flood the floor nor use more of the Maintenite solution than is necessary. Follow with a clean damp rinse mop.

(5c) When the floor is dry, apply two (2) coats of *(Rubber-Var diluted with one-half water) (Continental "18"). (When dry, polish each coat thoroughly.)*

(6) Magnesite Composition Floors

(6a) Clean floors free from dust or foreign matter.

(6b) Clean with water solution of *(Clean-O-Shine) (Nu-Tro-Fil).* Rinse and dry mop.

(6c) Apply two (2) coats of *(Car-Na-Var) (Continental "18") (specify either "Natural" or color wanted). (Polish first coat of Car-Na-Var when wet; polish second coat when dry.) (When dry, polish each coat of Continental "18" thoroughly.)*

(7) Terrazzo, Tile, Marble, and Slate Floors

(7a) Clean floors free from dust or foreign matter.

(7b) Terrazzo—Make a solution in the proportions of 1 pint of *(Nu-Tro-Fil) (Clean-O-Shine),* ½ pint of Rubber-Var and one (1) gallon of warm water. Scrub the floor with this solution and squeegee off the excess. When dry, polish thoroughly.

(7c) Apply (one (1)) (two (2)) coats of *(Rubber-Var diluted with one-half water) (Continental "18"). (When dry, polish each coat thoroughly.)*

(7d) Tile—As soon as the tile is laid and set, it shall be given one (1) coat of Clean-O-Shine which shall be allowed to remain until all other trades are through and the building completed. When the building is completed, scrub the surface clean with a warm water solution of Clean-O-Shine. When dry, polish and apply two (2) coats of Car-Na-Var, Natural. When dry, polish each coat thoroughly.

(7e) Slate—Apply one (1) coat of Clean-O-Shine which when dry, polish thoroughly. Finish with *(one (1)) (two (2))* coats of Car-Na-Var, Natural. When dry, polish each coat thoroughly.

(7f) Marble—As soon as the marble is laid and set, wet floor, apply *(Clean-O-Shine) (Nu-Tro-Fil),* then scrub. Squeegee off dust and excess solution, when dry polish. Then apply *(one (1)) (two (2))* coats of *(Rubber-Var diluted with one-half water) (Continental "18").* When dry, polish each coat thoroughly.

(8) Concrete Floors

(8a) Clean floors free from dust or foreign matter.

(8b) Clean with Clean-O-Shine solution, which when dry, apply coat of Seal-Var.

(8c) Over the filler apply two (2) coats of Car-Na-Var *(specify either "Natural" or color wanted).* When dry, polish each coat thoroughly.

Note: Seal-Var Dark Oak gives the floor an appearance of a composition floor the color of tan linoleum. Seal-Var Maroon gives a floor a dark red color. Where no change of color is desired, use Seal-Var Natural.

COVERING CAPACITIES OF CONTINENTAL FLOOR TREATMENTS

Treatment	Type of floor surface treated	No. of coats	Covering capacity, per gal. 1st coat, sq. ft.	2nd coat, sq. ft.	3rd coat, sq. ft.
Car-Na-Var	Hard wood (unfilled)	3	900 to 1200	1500 to 2500	2500 to 3000
	Soft wood (unfilled), terrazzo, magnesite, faience tile, Flexstone, linoleum, Marbleoid	3	800 to 1000	1000 to 1500	1500 to 2500
	Cork, cement, composition	3	500 to 1000	800 to 1500	1000 to 2500
	Mastic	2	900 to 1200	2500 to 3000	
	Painted, varnished, shellacked	1	2500 to 3000		
Rubber-Var	Rubber and asphaltic	3	3000 to 3500	4000 to 5000	5500 to 6000
	Terrazzo and marble	3	2000 to 2500	3000 to 4000	4500 to 5000
	Wood	3	1500 to 2000	2500 to 3000	3200 to 3500
Continental "18" (Formerly Luster-Var)	Non-porous surfaces	2	1500 to 2000	2000 to 3000	
	Porous surfaces	2	800 to 1000	1000 to 1500	
Clean-O-Shine and Nu-Tro-Fil	Wood	1	1500 to 2500		
	Cement	1	1200 to 2000		
	Composition	1	1000 to 2500		
	Linoleum	1	1500 to 3000		
	Tile	1	2000 to 2500		

HILLYARD CHEMICAL CO.

SHINE-ALL SALES CO. DISTRIBUTOR

EXECUTIVE OFFICES

ST. JOSEPH, MO.

BRANCH OFFICES AND WAREHOUSES IN PRINCIPAL CITIES

HIGHEST QUALITY FLOOR FINISHES AND TREATMENTS

Be Assured: Specify Hillyard's Twenty-six Years of Dependable Service

A nation-wide organization that provides personal supervision on the new job, also proper schooling on proper maintenance on the finished job

SPECIFICATIONS—FLOOR TREATMENTS

No. 1—Terrazzo

Its Treatment—

1. Immediately after final grinding, all moisture shall be sealed into the Terrazzo strictly in conformity with Standard Terrazzine Process Curing and Sealing Specifications (on file with National Terrazzo & Mosaic Association, Inc., also with all terrazzo contractors).

2. Within one-half hour after treatment traffic may be resumed.

3. Just prior to occupancy, the manufacturer shall supply to the building owner or agent such information and demonstrate such proper methods of maintenance as will sustain terrazzo guarantee and which shall be strictly in accordance with such specifications as are provided by the National Terrazzo & Mosaic Association. (Mr. U. F. Durner, General Secretary, 815 W. St. Paul Avenue, Milwaukee, Wis.) A.I.A 22E.

No. 2—Gymnasium (Wood) Floors

Treatment—

1. After all tradesmen have finished and sanding has been properly completed according to specifications, the entire floor area shall be thoroughly swept, removing any and all dirt and dust. Should any damage or spots occur thereafter, they shall be removed by, or at the expense of the damaging party responsible. Then upon the clear, dry dustless floor, one application of Hillyard's Special *Gym Wood-Primer* shall be applied according to directions.

2. Over the dry primed floor, all regulation markings (as provided) shall be made. Layout to be exact and to be approved by the Architect (or proper school authority). The Hillyard representative in your territory will supply all diagrams and information for markings, without charge, upon request.

3. After all markings are thoroughly dry, two coats of *Special Non-Slip Gym Finish* shall be applied, strictly in accordance with directions as supplied by the HILLYARD CHEMICAL COMPANY, St. Joseph, Mo. A.I.A. 19E9 Gym.

No. 3—Wood Floors

Treatment—

A. Close Grained and Sappy Woods—Maple, Pine, Fir, Spruce:

Immediately after sanding, all wood floors shall be filled and sealed with one application of Hillyard's *Hil-Glo Seal* and allowed to set and thoroughly dry for at least 24 hours, then—

B. Open Grained Woods—Oak, Etc.:

Immediately after sanding, all open grained wood floors shall be filled with an approved paste wood filler and stained according to color selected and allowed to thoroughly set and dry.

(For a soft, clear, light velvet sheen, specify "C" as follows):

Designate One of the Following Finishes, Either C or D—

C. All areas shall be swept free of dust and dirt and immediately thereafter one application of *Trackless Floor Dressing* shall be applied strictly in accordance with directions as supplied by the HILLYARD CHEMICAL Co., St. Joseph, Mo.

(For a hard, high-gloss finish, specify "D" as follows):

D. All areas shall be swept free of dust and dirt and immediately thereafter two medium light coats of *Hil-Glo Finish* shall be applied strictly in accordance with directions on container as supplied by HILLYARD CHEMICAL Co., St. Joseph, Mo.

For an unusually fine finish, also when on trim, steel wool or sand between coats. A.I.A. 19E9.

No. 4—Asphalt (Mastic) Tile

Treatment—

1. Just prior to occupancy of building, or upon given notice by the Architect or owner, all asphalt (mastic) tile shall be thoroughly cleaned. Immediately thereafter (prior to any traffic), two medium, light coats of *Hil-Brite Color Fixing-High Polish Finish,* shall be applied according to directions as supplied by the HILLYARD CHEMICAL COMPANY, St. Joseph, Mo.

2. Upon completion of the contract, the manufacturers shall supply to the building management such information and demonstrate such economical methods of maintenance as will practically and efficiently sustain floor guarantee. A.I.A. 23M.

No. 5—Rubber Tile

Treatment—

1. Just prior to occupancy of building, or upon given notice by the Architect or owner, all Rubber Tile shall be thoroughly cleaned. Immediately thereafter (prior to any traffic) two medium, light coats of *Hi-Brite Color Fixing-High Polish Finish,* shall be applied according to directions as supplied by the HILLYARD CHEMICAL COMPANY, St. Joseph, Mo.

2. Upon completion of the contract, the manufacturers shall supply to the building management such information and demonstrate such economical methods of maintenance as will practically and efficiently sustain floor guarantee. A.I.A. 23C.

No. 6—Cement: Gray or Colored

To Properly Cure, to Dust-proof and Water-proof—(Adds 9 to 18 Days Slow Steady Curing)—

After the finished cement has been allowed to set for 36 hours, but not longer than 48 hours, all cement areas are to be flooded with water and allowed to soak for one hour, then all excess water is to be squeegeed off and one (1) heavy application of Terrazzine applied strictly in accordance with specifications as supplied by the HILLYARD CHEMICAL Co., St. Joseph, Mo.

No. 7—Travertine Marble

To Dust-proof and Water-proof—

Just prior to final inspection, all Travertine should be thoroughly cleaned with solution of one (1) part of *Shine-All* and seven (7) parts water. After the surface is thoroughly dry, treat with *Onex Seal* strictly in accordance with directions as supplied by the HILLYARD CHEMICAL COMPANY, St. Joseph, Mo.

No. 8—Swimming Pools

To Eliminate Rust and Growth Bond—

Prior to filling, all floor, walls, and border should be thoroughly cleaned with one (1) part *Onexite* and seven (7) parts water. After the surface has thoroughly dried, apply two medium applications of *Onex Seal,* strictly in accordance with special pool directions as supplied by the HILLYARD CHEMICAL Co., St. Joseph, Mo.

Our Territorial Maintenance Engineer is your service engineer. He will be pleased to lay out the entire maintenance set-up on any building upon request of the Architect or Client. There is one near to serve you. If you are in doubt or your client has cause of disappointment on any type of floor, call him or wire this office at our expense. His services to you will be courteous, constructive and without obligation.

We operate in every section of the United States.

SCOFIELD, EVANS & COMPANY

Manufacturers of Floor Preservatives

Commercial Trust Building
PHILADELPHIA, PA.

DISTRIBUTORS

EASTERN AND MIDDLE WESTERN TERRITORY: C. J. Phillips Company, 508 South Dearborn Street, CHICAGO, ILL.
PACIFIC COAST TERRITORY: Continental Building Specialties, Inc., 408 South Spring Street, LOS ANGELES, CAL.

Products

REPELLO, a Permanent Preservative Treatment for floors of wood, concrete, composition, terrazzo, cork and linoleum.

REPELLO
TRADE-MARK

Repello

Repello is a mixture of processed organic oils having no chemical effect upon any material to which it is applied. Its action is entirely mechanical as it fills the pores or voids, and remains an elastic and cohesive binder for years. This elasticity is essential to withstand traffic, to prevent penetration of dirt and injurious materials and to stop disintegration of floor when exposed to the action of the elements.

On Wood Floors—One application is sufficient for the life of the floor. Penetration is complete and the wood becomes so well filled that the finish remains even though part of wood be worn away.

Repello will penetrate entirely through an inch of maple flooring in about twenty hours, and leaves a permanent finish in the wood itself. A floor so treated will not stain or lose its finish.

Repello prevents warping, checking, dusting and splintering, because it is waterproof and prevents the disintegration of the natural wood resins. It leaves no film on the surface, but becomes a part of the wood itself and completely fills the pores. By keeping out dampness and moisture which are necessary to the life of fungi it prevents dry-rot.

By preventing the grain of wood from raising, it insures a permanently smooth surface and finish.



Illinois Merchants Bank Building, Chicago, Ill.
GRAHAM, ANDERSON, PROBST & WHITE, Architects
Maple and cork tile floors treated with Repello

Repello in oak floors prevents the formation of discolored areas through the wearing out of the usual surface coatings and the subsequent action of air and water.

It prevents slivering and splintering; is one of the few materials which will make a pine floor resist the action of weather. When applied to wood sleepers, it prevents the usual rotting of the sleepers due to absorption of moisture from the concrete in which sleepers are embedded.

On Concrete Floors—No other known treatment penetrates more deeply than Repello. This penetration varies, depending on the density of the concrete, usually between ¼ and ½ in. It hardens the concrete to the full depth of its penetration by filling the tiny voids of the concrete with a tough elastic binder. The hardening and dustproofing qualities result from the same action which occurs in an asphalt pavement—the elastic binder holds the grit resulting from traffic until it gets so hard that it glazes over.

Repello renders a concrete floor waterproof, oilproof and alkaliproof. It protects the floor from the action of fatty and other organic acids which result from the decomposition of oils and greases.

On Composition Floors—Dusting and disintegration of composition floors is prevented because of the waterproof binder deposited in voids of the floor.

On Terrazzo Floors—Prevents dusting and disintegration of the cement binder in terrazzo.

On Linoleum and Cork Carpet—Applied to linoleum and cork carpet, it penetrates the entire body of the fabric. When so treated they do not become brittle and the life is increased.



Phoenix Knitting Co. Works, Milwaukee, Wis.
LOCKWOOD, GREENE & CO., Architects

Repello Specifications

All concrete floors, after they have had their proper set [All wood floors after being properly planed and sanded] and approved by the architect, are to be treated with Repello to be furnished and applied by the manufacturers, SCOFIELD, EVANS & COMPANY, Commercial Trust Building, Philadelphia, Pa., or their authorized agents.

A Few Representative Installations and Customers

Olympia Fields Country Club, Matteson, Ill.
F. W. Woolworth Company
Sears Roebuck & Company
International Tailoring Company, Chicago, Ill.
National Cash Register Company, Chicago, Ill.
American Seating Company, Grand Rapids, Mich.
General Baking Company
Tower Garage, Chicago, Ill.
Sinclair Auto Service Corp., Chicago, Ill.
Montefiore Hospital, Pittsburgh, Pa.
Toledo City Hospital, Toledo, Ohio
Hotel Stevens, Chicago, Ill.
Board of Trade, Chicago, Ill.
Famous Players-Lasky Company, Chicago, Ill.
Pacific Mutual Life Building, Los Angeles, Calif.
Atchison, Topeka & Santa Fe Ry. Co.
Chicago, Burlington & Quincy R. R. Co.
Chicago & North Western Ry. Co.
Massachusetts Institute of Technology, Cambridge, Mass.
University of Michigan, Ann Arbor, Mich.
Minneapolis Arena, Minneapolis, Minn.
First Presbyterian Church, River Forest, Ill.
Corpus Christi Church, Newport, Ky.
G. C. Kuhlman Car Co., Cleveland, Ohio
American Brass Company, Torrington, Conn.
State University of Iowa, Iowa City, Iowa

VESTAL CHEMICAL LABORATORIES, INC.

Manufacturers of Products for Sealing of Conditioning of Terrazzo and the Treatment and Maintenance of Hardwood Floors

HOME OFFICE
ST. LOUIS, MO.

NEW YORK OFFICE, 2413 Third Avenue

CHICAGO OFFICE, 320 No. La Salle Street

REPRESENATIVES IN ALL TERRITORIES
WAREHOUSES IN PRINCIPAL CITIES

Vestal Products Are Approved and Recommended by Members of National Terrazzo and Mosaic Association, Inc., Maple Flooring Manufacturers' Association, and Oak Flooring Manufacturers' Association

DUROC AND BRITEN-ALL TREATMENT—FOR TERRAZZO

The architect in making his decision on terrazzo samples selects the colors of marble and cement that will produce the desired effect. Every precaution should therefore be taken to protect new terrazzo and prevent stains and discoloration.

The Briten-All Treatment for terrazzo has been accepted by leading terrazzo contractors and is being specified by many of the leading architects of the country. Although this program is uniformly successful and accepted as the best treatment available for terrazzo, many jobs have been difficult to clean or condition due to stains and building dirt being tracked on the floor during the construction of the building. Most of these stains could have been avoided had the terrazzo been sealed immediately by the terrazzo contractor following the final honing or cleaning of the job.

Vestal Laboratories have developed DUROC, a Terrazzo Seal—for protecting and sealing new terrazzo. It is to be applied by the terrazzo contractor immediately following final honing and cleaning.

Purposes or functions of Duroc:

(1) Seals and protects new terrazzo from most stains and prevents dirt absorption during construction.

(2) Prevents dusting of new terrazzo caused by abrasive action of traffic.

(3) Brings out and emphasizes the natural colors of the marble aggregates.

(4) Resists the disintegrating action of abrasive powders and strong scrubbing solutions.

(5) Greatly facilitates the final cleaning in preparation for acceptance and makes maintenance easier.

(6) Duroc can be specified separately or in conjunction with the Briten-All Treatment for terrazzo. Considering the small additional cost, it is recommended that both Duroc and Briten-All Treatments be included in the specification, thus insuring the owner of receiving the job in the finest condition possible.

Duroc does not darken terrazzo—is not slippery.

Architect's Specifications—Duroc Treatment

(1) Immediately after the final honing or fine-stoning as called for in paragraph 50 (Cleaning) of Standard Specifications of the National Terrazzo & Mosaic Association, the terrazzo contractor shall wash all terrazzo areas with 5% Briten-All solution and clear water and rinse thoroughly. All surplus water shall be squeegeed off and when terrazzo is surface dry, apply one even coat Duroc using applicator or mop. Care must be taken to effect complete coverage. Areas being treated must be kept free from traffic during operation and until Duroc has thoroughly dried. Approximately 30 minutes.

Coverage—Approximately 600 sq. ft. per gal.

Note: This initial treatment serves to seal the terrazzo and thus protect the floors from abuse of other mechanics during completion of the building.

Architect's Specifications—Briten-All Treatment

(2) After all other trades have finished in the building and tools, equipment and rubbish have been removed from the premises, all terrazzo areas shall be turned over to the VESTAL CHEMICAL LABORATORIES, INC., or their representative, broom clean for final cleaning and conditioning.

(3) All terrazzo areas, of whatever nature, shall be thoroughly cleaned and treated with a 25% Briten-All solution in water, as follows:

Sufficient solution shall be spread over the floor to effect complete saturation. Allow this solution to remain on the floor 20 to 30 minutes, care being taken to see that sufficient solution is applied to prevent the surface from becoming dry. During this period, the solution shall be scrubbed well into the floor with an electric scrubbing machine equipped with a Bassine Fibre Scrubbing Brush. Pick up solution with a squeegee or mop. Follow with two thorough rinsings of clear water.



Sterling National Bank, New York, N. Y.
GILLETTE & WALKER, Architects
All terrazzo in this bank conditioned with Briten-All Treatment



DePaul Hospital, St. Louis, Mo.
O'MEARA & HILLS, Architects, St. Louis, Mo.
All terrazzo in this building conditioned with Briten-All Treatment

Architect's Specifications—Briten-All Treatment (Continued)

(4) All base, steps, risers, stringers, etc., shall be hand-treated, as above.

(5) All field areas shall be finished with two coats of Vestagloss "T"—each coat to be applied thinly and evenly and buffed thoroughly with an electric polishing machine.

Note: The Briten-All Treatment corrects efflorescence, removes bloom, emphasizes the natural color of the marble chips and produces a beautiful patina or lustre ordinarily acquired only with age.

Estimates—Estimates furnished by any branch office or by the home office in St. Louis, Mo.

Note: The Briten-All Treatment is approved and endorsed by members of the National Terrazzo & Mosaic Association and other leading Terrazzo Contractors.

Important: The Briten-All Treatment shall be applied either by the VESTAL CHEMICAL LABORATORIES, INC., or under the direct supervision of their authorized representatives.

VESTAL WOOD FLOOR PROGRAM SEALS AND PROTECTS FLOORS

Pyra-Seal answers all of the requirements of a satisfactory surface seal and preservative.

Pyra-Cote successfully withstands heavy duty traffic, is therefore a real service finish.

Vesco-Seal provides a fast, safe and elastic floor finish. It will withstand the jars and jolts of gymnasium work.

PYRA-SEAL—PYRA-COTE TREATMENT

Seals and Preserves Maple, Birch, Beech, Oak and Pine Floors

Pyra-Seal penetrates the surface of the wood and forms a durable, tough seal which will not mar easily nor flake off. It is easily and economically maintained, without scrubbing.

The Maple Flooring Manufacturers Association states that frequent scrubbing should be discouraged and avoided wherever possible. Moisture penetrates and results in warping, splintering and eventual disintegration of the wood.

Pyra-Seal actually seals the pores against the penetration of dirt, resists oil and ink stains as well as moisture, and prevents decay. It assures an attractive, serviceable floor, brings out the natural beauty of the grain, and insures easy maintenance.

Pyra-Cote contains certain waxes and gums which produce a non-slip, tough, wear-resisting finish. Pyra-Cote will withstand about three times the traffic wear of ordinary waxes and is an ideal heavy duty service finish. Dust and dirt do not work into Pyra-Cote as into ordinary waxes.

Floors treated with Pyra-Seal and Pyra-Cote become soiled only on the surface and are therefore easily and economically maintained.

This treatment is particularly adapted to schools, offices, stores and similar types of buildings where the floors receive hard wear and are expected to appear attractive and in keeping with their surroundings.

Important: Pyra-Seal, Pyra-Cote or Vesco-Seal Treatment of Wood Floors shall be applied by the flooring contractor or the painting contractor in accordance with the instructions of the VESTAL CHEMICAL LABORATORIES, INC.

Note: The Vestal Program of Wood Floor Treatment and Maintenance is approved and recommended by the Maple Flooring Manufacturers Association, Oak Flooring Manufacturers Association, and leading Wood Floor Contractors.

Architect's Specifications—For Pyra-Seal—Pyra-Cote Treatment

All floors are to be sanded, such sanding to be done by the flooring contractor and the floor protected in accordance with the specifications of the Maple Flooring Manufacturers' Association. Immediately after the sanding operation, the floor shall be sealed as follows:

Floor Treatment—(1) All wood floors, with the exception of the gymnasium, shall be given two coats of Pyra-Seal applied with a brush or a Vestal Lambswool Applicator. Allow 8 hours for the first coat to dry and from 10 to 12 hours for the second.

(2) Following complete drying of second coat of Pyra-Seal, apply two thin even coats of Pyra-Cote, using Vestal Lambswool Applicator, buffing thoroughly between coats with weighted brush or preferably with an electric polishing machine.

Important: Temperature of 70° F or above shall be maintained in the building while wood floors are being treated.

Note: Oak Floors shall be filled with Silex Paste Filler prior to application of first coat of PYRA-SEAL.

Coverage—*Pyra-Seal covers approximately 700 sq. ft. per gallon, one coat, and Pyra-Cote, 1200 sq. ft. per gallon, one coat.*

Maintenance—Floors treated by the above method do not require daily mopping or scrubbing. Such floors require only sweeping with a Vestal Buffing Mop. This mop picks up and holds the dust, eliminating the use of sweeping compounds, floor brooms, and reducing maintenance costs.

VESCO-SEAL TREATMENT FOR GYMNASIUMS AND BALLROOMS

Gymnasium floors should be properly sealed to avoid stains and preserve the wood. At the same time, a gymnasium floor requires a special type of Seal which, first of all, must give plenty of traction and, secondly, allow a durable, elastic finish which will withstand the jars and jolts to which a gymnasium is subjected.

Vesco-Seal penetrates the pores of maple, beech and birch, leaving a smooth, hard, elastic finish, having plenty of traction. It produces a surface which is fast and safe and will not crack or chip. It is highly impervious to water, heat, alcohol, most acids, ink and iodine. It brings out the natural beauty of the wood and provides a serviceable attractive floor which is easily maintained.

Architect's Specifications—Gymnasiums and Ballrooms

Sanding of a gymnasium floor (or ballroom) shall be done by the flooring contractor and protected by him in accordance with the specifications of the Maple Flooring Manufacturers' Association. Immediately following the sanding operation, the floor shall be sealed as follows:

(1) Apply two coats of Vesco-Seal a day apart. Apply liberal first coat with even strokes of a clean brush or a Vestal Applicator.

(2) After allowing 24 hours for thorough drying of first coat, a light second coat shall be applied.

(3) Allow 24 hours for second coat to dry. If desired, surface may then be polished with a heavy disc polishing machine, using No. 00 steel wool.

(4) Paint lines for games as directed by architect or physical director.

Coverage — Approximately 400 sq. ft. per gallon, two coats.

Maintenance — Sweep with Vestal Gymnasium Buffer or Corridor Mop treated with Vesco-Lite. This buffing mop picks up all the dust, cleans and polishes in one operation.



Maple Drill Floor, Illinois Militia Armory, Chicago, Ill.
A Vestal Sealed and Maintained Floor

ALUMINUM COMPANY OF AMERICA

Member of The Producers' Council, Inc.

Manufacturers of "Alcoa Albron" for Aluminum Paint

2444 Oliver Building
PITTSBURGH, PA.

For our pages on Roofing, and Aluminum and Its Alloys, see Manufacturers' Index

Alcoa Albron Aluminum Bronze Powder for Paint

Alcoa Albron—Alcoa Albron is a pure aluminum bronze powder composed of tiny flat flakes of Alcoa Aluminum. To be sure of obtaining a pure metallic pigment for aluminum paint, specify Alcoa Albron, made only by ALUMINUM COMPANY OF AMERICA.

Unique Characteristic of "Leafing" Gives Aluminum Paint Superior Durability and Protective Qualities—When aluminum paint is brushed or sprayed on any surface, many of the tiny flakes of aluminum, which form its pigment, rise to the surface of the paint film and "leaf"—overlap one upon another to form a continuous coat of metal protection. This leafed film has many advantages. It is highly resistant to the penetration of moisture. Being opaque to ultra-violet light, it serves as a barrier to the paint-destroying rays of the sun. These leafed metallic flakes also give aluminum paint good hiding power. One coat, which is generally sufficient for ordinary interior surfaces, will hide any under-color, even black. For surfaces exposed to the weather and where long life is required, two or more coats are recommended. A well-made aluminum paint will reflect from 60% to 70% of the light falling upon it. This is another quality attributable to the bright metallic aluminum from which it is made. It is easily kept clean, and it will withstand repeated washings. Aluminum paint is highly resistant to the action of sulfur-containing gases and is not darkened by them.

Uses—Aluminum paint may be used on practically any kind of a surface: wood, metal, concrete, plaster, brick, fabric, etc. Its light- and heat-reflecting qualities make it valuable for protecting oil storage tanks, refining equipment and other structures which are exposed to sunlight and which it is desired to keep as cool as possible. It is used on the interiors of factories, offices and lobbies, because its bright metallic sheen aids illumination and lends a modern note to interior decoration. Its resistance to moisture, acid fumes and sulfur compounds makes it applicable to interiors of laundries, textile dyehouses, bakeries and railroad roundhouses.

Aluminum Paint for Priming and Back-painting Wood—Rapid changes in the moisture content of wood are one of the chief causes of paint failure. The ability of aluminum paint to resist this rapid moisture change has been proved again and again.

In tests of all kinds and under many different conditions, the moistureproofing power of aluminum paint is among the highest obtainable with practical surface coatings. Its opaque pigment minimizes the destructive action of sunlight and greatly prolongs the useful life of the paint.

Because of its superior protective qualities, aluminum paint is especially recommended for priming as well as for back-painting wood.

Every piece of building lumber that is to be painted at all, should have a coating of aluminum paint on both sides, edges and ends.

Mill-primed Lumber—Lumber manufacturers, realizing the advantages of aluminum paint, are now priming many of their products with it at the mill.

Lumber so treated is a better building material because it is protected against moisture in transit, in the lumber dealers' yards and at the point of construction, as well as after it has been used in the building.

Where Aluminum Paint Is Obtained—ALUMINUM COMPANY OF AMERICA does not sell paint, but aluminum paint made with satisfactory vehicles and Alcoa Albron Powder may be purchased from most reputable paint manufacturers, jobbers and dealers.

Be sure the pigment portion is Alcoa Albron and is so designated.

We will be glad to direct you to the nearest source of supply if, for any reason, you cannot obtain the kind of aluminum paint you want.

Aluminum Paint Specifications

1. Pigment—Aluminum Bronze Powder—The pigment portion of the paint shall consist of Standard Varnish Alcoa Albron Powder manufactured by ALUMINUM COMPANY OF AMERICA.

2. Vehicle—Long Oil Varnish—The vehicle for use on weather-exposed steel or other metals, brick, concrete and plaster shall consist of a long oil varnish. It shall contain not less than 50% by wt. of non-volatile oils and gums. It shall pass a 60% Kauri Reduction Test as described in Federal Specification TT-V-121. It shall be of such consistency that when thoroughly mixed with Alcoa Albron in the proportion of 2 lbs. per gal. of vehicle, the paint shall show satisfactory spreading qualities and shall not break or sag when applied to a smooth, vertical surface. This consistency will be between 0.5 and 1.0 poise and will correspond to Tubes A to D of the Gardner Holdt Air Bubble Viscometer. The paint shall set to touch in not less than 2 hrs. nor more than 6 hrs. and dry hard and tough in not more than 24 hrs., except where it is to be used on brick, concrete or plaster in which case, it shall set to touch in 2 to 3 hrs. and dry hard and tough in not more than 18 hrs.

3. Vehicle—Interior Varnish—The vehicle for steel or other metals, wood, brick, concrete or plaster subject to ordinary interior exposure shall consist of a varnish similar to the one described in Par. 2 except that it shall contain not less than 40% by wt. of non-volatile oils and gums, and pass a zero% Kauri Reduction Test. It shall also set to touch in not more than 2 hrs.

4. Vehicle—Varnish Vehicle for Wood (very long oil varnish)—The vehicle for use on weather-exposed wood shall consist of a very long oil varnish: It shall contain not less than 60% by wt. of non-volatile oils and gums. It shall pass a 100% Kauri Reduction Test as described in Federal Spec. TT-V-121. It shall be of such consistency that when thoroughly mixed with Alcoa Albron in the proportion of 2 lbs. per gal. of vehicle the paint shall show satisfactory spreading qualities and shall not break or sag when applied to a smooth, vertical wood surface. This consistency will be between 0.5 and 1.0 poise and will correspond to Tubes A to D of the Gardner Holdt Air Bubble Viscometer. The paint shall set to touch in not less than 3 hrs. nor more than 8 hrs. and dry hard in not more than 24 hrs.

5. Mixing—Aluminum paint shall be mixed on the job and only enough for one day's use shall be mixed at one time. The weighed amount of powder, 2 lbs. per gal. unless otherwise specified, shall be placed in a suitable container and a measured volume of vehicle then poured over it. The mixture shall then be stirred thoroughly until a uniform paint is obtained. Each time any paint is removed from the container, the paint shall again be stirred to insure proper mixing. The paint shall also be suitably stirred during use.

6. Application—The aluminum paint may be applied with either brush or spray gun. If spraying equipment is employed, only sufficient pressure should be used to secure adequate atomization. If a brush is used, all final strokes should be made in the same direction. Excessive brushing will result in streaking and darkening.

7. Painting Weather-Exposed Steel—*New Work*—The steel surface to be painted shall be thoroughly clean and dry. Rust, mill scale, dirt, or other foreign matter shall be removed by scratch brushing, scraping or sand blasting. Oil and grease shall be removed with gasoline. No painting shall be done in wet or freezing weather or when there is frost or moisture condensation on the steel. A good rust inhibitive priming coat shall be applied and allowed to dry for at least 48 hrs. Two coats of aluminum paint made with Long Oil Varnish (Par. 2) and Alcoa Albron shall then be applied, allowing 48 hrs. drying time between coats.

8. *Old Work*—The steel surface shall be free from rust, loose paint, loosely adhering mill scale, dirt and foreign matter. Oil and grease shall be removed with gasoline. No painting shall be done in wet or freezing weather or when there is frost or moisture condensation on the steel. All bare spots shall be touched up with a good rust inhibitive priming paint. Two coats of aluminum paint made with Long Oil Varnish (Par. 2) and Alcoa Albron shall then be applied, allowing 48 hrs. drying time between coats.

9. Painting Weather-Exposed Wood—*New Work*—The surface to be painted shall be thoroughly clean and dry. No painting shall be done in wet or freezing weather or within 24 hrs. following a rain. Knots shall be coated with a high grade four-pound cut orange shellac. A priming coat of aluminum paint shall then be applied. The paint shall consist of Alcoa Albron mixed with Varnish Vehicle for Wood (Par. 4). In the case of open-grained lumber or badly weathered wood, the priming coat shall contain 1½ lbs. of Alcoa Albron per gal. of vehicle. Cracks and counter sunk nail-heads shall be filled with a good putty before additional coats are applied. If two coats of aluminum paint are specified, the second coat shall consist of a paint made with 2 lbs. of Alcoa Albron per gal. of vehicle. At least 48 hrs. drying time shall be allowed between coats. Other top coats may be used as specified, allowing the same drying time.

10. *Old Work*—The surface to be painted shall be thoroughly scraped and scratch brushed to remove blistered or loosely adhering paint. Cracks shall be filled with putty. No painting shall be done in wet or freezing weather or within 24 hrs. following a rain. A first coat of aluminum paint made of Alcoa Albron and Varnish Vehicle for Wood (Par. 4) shall then be applied. A drying time of at least 48 hrs. shall be allowed before top coats of paint are applied. If two coats of aluminum paint are specified, the second coat shall consist of the same paint as was used in the first coat.

11. Painting Brick, Concrete and Plaster—The surface to be painted shall be dry and free from all loose paint, dirt and calcimine. The paint shall consist of Alcoa Albron mixed with varnish vehicle (Pars. 2 or 3). If the surfaces are exposed to the weather, two coats of aluminum paint shall be applied. If the surfaces are porous, the powder content of the paint should be reduced from 2 lbs. to 1¼ or 1½ lbs. per gal. of vehicle for the first coat.

SAMUEL CABOT, INC.

Manufacturing Chemists
141 Milk Street, BOSTON, MASS.

BRANCH OFFICES

NEW YORK, N. Y., 101 Park Avenue — CHICAGO, ILL., 5000 Bloomingdale Avenue
PHILADELPHIA, PA. — KANSAS CITY, MO. — LOS ANGELES, CAL. — SAN FRANCISCO, CAL.
SEATTLE, WASH. — PORTLAND, ORE. — MINNEAPOLIS, MINN.

PRINCIPAL AGENCIES

ATLANTA, GA., Atlanta Paint Company (Shingle Stains and Collopakes); DeJarnette Supply Co. (Quilt)
BALTIMORE, MD., National Building Supply Co.
CINCINNATI, OHIO, The Saeger-Winstel Co. (Shingle Stains and Collopakes); The Cincinnati Builders Supply Co., 209 East Sixth St. (Quilt)
CLEVELAND, OHIO, The Cleveland Paint & Color Co. (Shingle Stains and Collopakes); The Harvard Lumber Co. (Quilt)
COLUMBUS, OHIO, The Creith-Potter Lumber Co.
DALLAS, TEX., Macatee, Inc.
DENVER, COLO., The Colorado Builders' Supply Co.
DETROIT, MICH., Gregg Company (Quilt); Gagnier Paint Company (Shingle Stains and Collopakes)
HOUSTON, TEX., W. L. Macatee & Sons
NEW ORLEANS, LA., Jahncke Service Inc.
PITTSBURGH, PA., Houston-Starr Company
RICHMOND, VA., R. McC. Bullington
ST. LOUIS, MO., Hunkins-Willis Lime & Cement Co. (Quilt); Sullivan Paint Co. (Shingle Stains and Collopakes)

CANADIAN AGENT: BRANDRAM-HENDERSON, Ltd.
HALIFAX, MONTREAL, TORONTO, WINNIPEG, CALGARY, VANCOUVER
(Shingle Stains and Collopakes)

Cabot's
Creosote Shingle and Wood
Stains

Cabot's Collopakes

Samuel Cabot Inc.

Products

CREOSOTE SHINGLE and WOOD STAINS.
INTERIOR WOOD STAINS.
CREOSOTE BLEACHING OIL.
SEMI-FLAT WATERPROOF COLLOPAKES.
OLD VIRGINIA WHITE.
GLOSS COLLOPAKES.
DOUBLE-WHITE.
INTERIOR FLAT WATERPROOF COLLOPAKES.
CLEAR BRICK and CLEAR CEMENT WATERPROOFINGS.
CONSERVO WOOD PRESERVATIVE.
DAMPPROOFING.
FLEXIBLAC PROTECTIVE PAINT.
Also Lampblack and Mortar Colors.

For Stained Shingles, and Cabot's Quilt and Building Insulation, see Manufacturers' Index.

Cabot's Creosote Shingle and Wood Stains

These celebrated stains were first made in 1882, and have revolutionized the art of exterior decoration. They have now been proved by 50 years of continuous use in every climate. The strongest and purest mineral colors obtainable are reduced for these stains to a microscopic fineness in linseed oil. The method employed breaks the colors up into much smaller particles than is possible with grinding alone. These colors are then dispersed in especially refined, pure, colorless creosote.

Uses—Cabot's Creosote Shingle and Wood Stains are for use on roof and side shingles, clapboards, siding, rough or smooth boarding, fences, and all outside woodwork and dressed lumber.

Beautiful Artistic Effects—These stains give soft, velvety colors to wood without hiding its texture. There is no gloss or shine and the colors are guaranteed fast. There are no two pieces of wood exactly alike, and the stains bring out the beautiful effects of grain and surface instead of masking them with a painty film.

Preserve the Wood—"Creosote is the best wood preservative known"—*Trautwein.* The pure refined creosote used in Cabot's Stains usually doubles the life of the wood, protecting it from decay and the ravages of insects. No holder-oil, gas drip or crude creosote is used—5% of any one of these products will give stain a strong creosote odor but will have little if any preservative effect.

Diminish Inflammability—The creosote makes wood more resistant to fire.

Cabot's Stains contain no inflammable oils, such as kerosene or benzine.

Wholesome and Sanitary—Creosote has great antiseptic and sanitary power. Cabot's Stains used inside and outside of stables and poultry houses, sheds, etc., will preserve the wood, destroy insects, parasites and disease germs, and make the premises sanitary and wholesome.

Colors—Made in 22 standard colors and in No. 1166 White Primer.

Special Colors—Special colors and shades will be made for architects who wish to produce special effects. Send us samples to match of suggestions to follow.

Specifications—Roof (wall-shingles, siding, trim) shall be stained two or three coats with Cabot's Creosote Shingle and Wood Stains, color to be selected by the architect. All woodwork shall be dry and clean before application. Stir the stains thoroughly and keep well stirred while using. If more than one package is required, mix all together in one large container. Do not thin out. Apply with a broad, flat brush, like paint (with a spray machine). (Shingles shall be dipped before laying.) Allow 24 hours between coats.



Residence at Lake Mohawk, N. Y.
EDWIN R. CLOSS, Architect and Owner
Roof and sidewalls stained with Cabot's Cresote Shingle and Wood Stains

Covering Capacity—*On new work, shingles, or rough wood:* One brush coat, 1 gal. to 150 sq. ft. of surface. Two brush coats, 1 gal. to 100 sq. ft. of surface. Hand dipping and one brush coat 3 to 4 gal. per 1000 of 16-in. shingles. Larger sizes take proportionately more.
On smooth wood: 1 gal. covers from 200 to 250 sq. ft., two coats.

Stains Over Paint—Any of the darker, heavier colors go well over old paint but the "stain effect" is not possible over new solid coats of paint.

Paint Over Stain—Paint can be applied over Cabot's Stains, which make splendid priming coats because of their preservative action and prevention of mildew.

Restaining—When it is desired to renew the stains this can usually be done by one coat of the same color; or if a change of color is desired, by two coats. In restaining, a lighter shade should be used than the result desired, because the stains, being transparent, will come out darker on old wood than on our samples, which are new wood.

Cabot's Interior Stains

Cabot's Interior Stains are a new type of colloidal interior wood stains with a color penetration, making possible for the first time grays and other light shades that preserve the character and grain of the wood. Transparent and non-fading. Free from objectionable odor.

Specifications—Interior woodwork shall be stained with Cabot's Interior Stains, color to be selected by the architect. All woodwork shall be dry, clean and smooth before application. All nailholes and other marks shall be filled. Apply with large brush. Allow at least 24 hours between first and second coat. Finish with varnish, shellac or wax.

Note: Handsome effects may be secured if left unfinished with or without rubbing down.

Covering Capacity—One gallon covers 300 sq. ft. on smooth wood and about one-half as much on rough wood.

Cabot's Creosote Bleaching Oil

This produces exactly the same result as nature and gives shingles and woodwork the beautiful silver gray tone which results from many years of exposure to salt air at the seashore. It secures this effect in from six to twelve months. A small amount of gray pigment gives a delicate gray tone from the first and as this wears off it is followed by the bleaching of the wood itself. It does this either on the coast or inland. The effect grows constantly better with age and no further treatment is necessary. The creosote preserves the wood from decay and also prevents mildew and blackening.

Specifications—Roof and/or (wall shingles) (siding) (exterior trim) shall be finished with Cabot's Creosote Bleaching Oil. All woodwork shall be dry and clean before application. Stir the Bleaching Oil thoroughly and keep well stirred while using. If more than one package is required, mix all together in one large container. Do not thin out. Apply with a broad, flat brush, like paint (a spray machine). (Dip shingles before laying.) Allow 24 hours between coats.

Covering Capacity—*On new work, shingles or rough wood:* One brush coat, 1 gal. to 150 sq. ft. of surface. Two brush coats, 1 gal. to 100 sq. ft. of surface. Hand dipping and one brush coat 3 to 4 gal. per 1000 of 16-in., 3½ to 4⅓ gal. per 1000 of 18-in., 6 to 7 gal. per 1000 of 24-in. shingles.

On new work, smooth wood: 1 gal. covers from 200 to 250 sq. ft., two coats.

How Cabot's Collopakes Differ from Ordinary Paints

The pigments (coloring) of Cabot's Collopakes are processed in an entirely different way than those in ordinary paints, and the manifold advantages of Collopakes result from this difference. In Cabot Collopaking Process, pigments are not ground but are subdivided by a new method to a degree of fineness many times greater than is possible with grinding. This extremely small size of particles makes it possible to dissolve the pigment colloidally in fixatives and thinners which have been specially treated to adapt them for this purpose. So thorough is the solution that Collopakes can be left in the package over a long period of time without settling out hard or requiring more than very little stirring before they are ready to use.

Collopakes, as a result, have marked advantages over paints produced by ordinary grinding methods.

The fine pigments are carried further into the pores of the wood, giving far better priming qualities and adhesion, tending to prevent chipping and peeling. The texture is finer and deeper and color values are richer. The finished surface is extremely durable and tough, with long life. Collopakes have tremendous covering power, which makes them economical to use, because fewer coats are needed. They are automatically self-leveling and show no brush marks.

Cabot's Gloss Collopakes

Pure pigment gloss colors, colloidally compounded for covering all building materials with durable, brilliant colors.

Owing to the demand for solid colors having the same brilliancy, freshness and durability for which Cabot's Shingle Stains have been famous, our laboratory developed Cabot's Gloss Collopakes from the same pure pigments.

These are not paints, because they are not common colors ground in oil in the old way and mixed with inert "fillers," but are made by the Cabot Collopaking Process (i.e., pigments divided to sub-microscopic fineness in colloidal solution). Consequently Cabot's Gloss Collopakes do not fade or grow lifeless with age. They have remarkable richness and depth of color as well as lasting qualities.

Particularly remarkable is the hiding power of the Gloss Collopakes. Two coats of Collopakes have hiding power equal to three coats of ordinary paint. The covering power is greater also, thus giving greater economy.

Although Cabot's Gloss Collopakes are made in all colors, it is the *greens* for which they are especially famous. Really lasting green colors are hard to get, but Cabot's *Green* Gloss Collopakes keep their color and gloss longer than any other color we know of. Wherever green exterior colors are required, the Green Gloss Collopakes will give remarkable service, keeping bright and unfading for years.

As in Cabot's Shingle Stains and other Collopake products, the colors are so fine that they penetrate into the pores of the surface, and their durability is not dependent on adhesion alone like paint.

Specifications—Exterior trim (and shutters) (blinds) shall be finished with Cabot's Gloss Collopakes, two (three) coats, colors to be selected by the architect. Apply only to dry clean surfaces.

No special primer is necessary, but on very porous or rough surfaces, thin first coat, by adding not over 1 qt. linseed oil, turpentine or mineral naphtha to the gallon. On cement walks and floors, thin first coat by adding not over 1 gal. turpentine or mineral naphtha to the gallon of Collopakes; and for a second coat by adding not over 2 qts. turpentine or mineral naphtha to the gallon.

Note: The Greens, Blues, Signal Red and Bright Yellows must not be applied to fresh plaster, magnesite or cement because of the free lime present.

Covering Power—On smooth surfaces, about 350 sq. ft., two coats.

Cabot's DOUBLE-WHITE

A brilliant white Non-gloss Collopake combining the greatest brilliancy with the greatest hiding power and wearing qualities. As compared to standard white lead and oil, Cabot's DOUBLE-WHITE has about 50% greater hiding power, yet it is more fluid. It is much whiter than white lead and oil and spreads more evenly, flowing into and filling the grain of the wood. Once dry it loses all gloss and has a beautiful velvet texture and finish. It is not affected by gases and light, and is waterproof.

Cabot's DOUBLE-WHITE is made to be applied to all kinds of surfaces. Wood, brick, stucco, and cement surfaces have heretofore required different kinds of paints and coatings, and different treatments where a surface covering was wanted. Now DOUBLE-WHITE suits them all.

DOUBLE-WHITE was made for these and other modern needs which paint does not meet. These include—

(1) A non-gloss white, avoiding the usual painty appearance.
(2) A smoother coat with more artistic texture and depth.
(3) A hiding power that will cover the surface with fewer coats and thus save material and labor.
(4) More perfect priming and adhesive properties.
(5) Waterproofing and preservative qualities.
(6) Ability to resist the growth of moss and fungus in southern climates.

Note: (The Honorable W. J. Pierpont, whose summer home is on the Isle of Hope, near Savannah, Ga., tells us that Cabot's DOUBLE-WHITE is the only white he has ever used that will withstand mildew.)

Cabot's DOUBLE-WHITE is so white that lead-and-oil looks yellow by comparison. Being a Collopake color, the particles of white are carried in colloidal solution into the pores of the surface, making a waterproof, permanent, non-peeling bond with beautiful texture, free from brush marks.

Specifications—Exterior walls (and trim) (and brick chimneys) shall be finished with Cabot's DOUBLE-WHITE, two (three) coats. Apply only to clean dry surfaces. Although DOUBLE-WHITE settles but slightly and



House in Orange, New Jersey

W. F. BOWERS, Architect

Walls finished with Cabot's DOUBLE-WHITE Collopakes; shutters with Cabot's Green Gloss Collopakes

the pigment never becomes hard, it is well to stir before using, in order to insure complete solution. For priming or to secure proper brushing consistency thin out in the usual way with linseed oil and turpentine or mineral naphtha, the amounts and proportions to be varied to suit conditions.

Covering Power—About 500 sq. ft., one coat; or about 300 sq. ft., two coats on dressed lumber.

Cabot's Interior Flat Waterproof Collopakes

These have been developed to improve the art of interior decoration. They are compounded colloidally like all other Cabot Collopakes and so have many advantages not found in any other type of interior flat.

Uses—Cabot's Interior Flat Waterproof Collopakes can be applied to any kind of surface.

They are especially fine for *undercoating work* because of freedom from brush marks, practically eliminating the necessity of sanding or rubbing down. They go equally well on wood, plaster, stone, stucco or metal of any kind, *including metal ceilings where there is a particularly large use for them.*

Owing to their special nature, they lend themselves more easily to mottled sponged and stencilled work, and can be used for the production of all kinds of two-tone and three-tone wall finishes.

Advantages—Show no brush marks. Have greater hiding power. Break up extremely easily in package (not settling hard on the bottom, nor sticking together). Are flatter. Have better priming and sizing properties and show less suction. Have greater reflecting power for light. Have no tendency to collect dirt. Are *washable* and *waterproof.*

Specifications—Interior walls (and ceilings) shall be finished with Cabot's Interior Flat Waterproof Collopakes, two (three) coats, colors to be selected by the architect. Apply only to dry, clean, well-seasoned surfaces. It is well to stir before using, in order to insure complete solution of the Collopakes. Sizing is not usually required. Where necessary, thin with turpentine or mineral naphtha, but the product is much freer brushing than it appears and we advise testing it by brushing before thinning is resorted to. Apply with a 4-in. flat brush using a "full-brush" and a "flowing-coat" which makes quick work and saves labor.

Cabot's Semi-Flat Waterproof Collopakes

For many years Cabot's Waterproof Stucco and Brick Stains have been celebrated for tinting and waterproofing stucco and brickwork, and Cabot's Old Virginia Tints for woodwork. By the new Cabot Collopake process—colors in colloidal solution—we have now made a compound which has all the virtues that have made these well-known products so popular and successful; and the new compound is, moreover, more waterproof, has deeper and richer color-values, finer texture, greater durability and increased opacity.

Cabot's Semi-Flat Waterproof Collopakes form no hard "painty" coating and therefore do not tend to crack or peel off with age, as do paints. They are not shiny. They are more fluid than ordinary paints, flow on the surface more easily, are quicker and cheaper to apply, and lower in first cost.

Specifications—Exterior stucco (or brick) (wood) (stone) shall be finished with Cabot's Semi-Flat Waterproof Collopakes, two (three) coats, colors to be selected by the architect. Stir before using in order to insure complete solution. Do not thin. Use two coats. Surface must be clean and dry before applying. Apply like paint.

If used for dipping shingles, use Cabot's No. 1166 Special White Primer, and brush with Semi-Flat after laying. On sawed shingles and undressed lumber use two coats. If dark woods are used, three coats may be necessary.

Covering Capacity—1 gal. covers 100 to 150 sq. ft., two coats on shingles, rough wood and brickwork.

Cabot's Old Virginia White

Cabot's Old Virginia White produces the "pastel white" effect—as bright and clean and cool as new whitewash, but as lasting as paint. Old Virginia White is the white of Cabot's Semi-Flat Collopakes and ideal for all surfaces where the brightest and cleanest flat white is required.

What it does: Gives soft, artistic color-values, having a texture and depth almost equal to a pastel painting. No "painty" effect. Thoroughly waterproofs the surface. Wears as long as the best paint and ages more gracefully. Does not crack or peel and always remains in condition for easy renewal.

Old Virginia White has been especially successful on brickwork and also on stone and stucco.

From the first, Old Virginia White has had the most enthusiastic approval of the architects, and many years experience has proved not only that it is fully as durable as the best paint, but also that it retains its brilliant white tone with age and at the same time grows more mellow and harmonious.

Specifications and Covering Power—Same as Semi-Flat Waterproof Collopakes.

Cabot's White Collopake Enamel

A new type of white enamel, for use on wood, plaster, or metal, *indoors or outdoors,* and with all the added and exclusive advantages of the patented Cabot Collopaking Process.



Residence in Waban, Mass.
GRAVES & EPPS, Architects, Boston
Walls finished with Cabot's Old Virginia White

Specifications—Interior or exterior wood (plaster) (metal) shall be finished with Cabot's White Collopake Enamel, with two (three) coats. Stir thoroughly to insure uniform solution. Apply only to clean dry surfaces. No thinning required as a rule, but if necessary may be done with turpentine or mineral naphtha, in the usual manner. (*Best Undercoater:* Cabot's Interior Flat Collopakes make a perfect filler, leaving no brush marks, and requiring minimum sanding.) Apply like paint, with 4-in. brush. Tints may be easily made on the job by adding the proper proportions of Cabot's Gloss Collopakes in primary colors, or else with high grade finely ground tube or paste colors.

Cabot's Clear Brick and Cement Waterproofing

Cement Waterproofing is for cement, stucco and light colored brick or stone—for light colored artificial stone.

Brick Waterproofing is for darker colored brick or sandstone, and for darker colored artificial stone.

The waterproofing ingredient of Cabot's Clear Waterproofings is a wax produced by nature for waterproofing purposes, dissolved in a penetrating solvent which carries the waterproofing deeply into pores of material to be waterproofed and seals them. The clear cement waterproofing is chemically treated so as to be unaffected by alkaline lime salts found in cement and stucco. Cabot's Waterproofings are much more waterproof than boiled linseed oil which, because of oxidation, must be reapplied every two or three years.

Cabot's Clear Waterproofings are being used more and more to waterproof large buildings faced with artificial stone.

Specifications—All exterior brick (stone) shall be finished with Cabot's Clear Brick or Clear Cement Waterproofing.

Clear Brick Waterproofing—Apply with a brush, like paint. Two coats are usually sufficient. Do not apply more than bricks will absorb. If bricks are stained from the salts of the clay being dissolved by rain, remove these white stains with a weak muriatic solution, rinse the surface with clean water and thoroughly dry before treating with the Waterproofing.

Cement Waterproofing—Apply with a brush, like paint. Apply as many coats as are necessary to completely fill the pores on all parts of the surface, but do not allow coating to stay on the surface. The success of Waterproofing depends upon application, and great care should be taken to apply enough, but not too much.

Covering Capacity—1 gal. will cover from 200 to 300 sq. ft., two coats on smooth surfaces, and from 100 to 200 sq. ft. on rough surfaces. Clear Brick Waterproofing if used on face brick will cover from 300 to 400 sq. ft.

Cabot's "Conservo Wood" Preservative

"A preservative that cannot penetrate cannot preserve."

Conservo is a penetrating preservative. It goes deeply into the wood. It sterilizes the bacteria that produce decay and repels ants, borers and all other wood-destroying insects and worms.

Use Conservo On—Roof rafters and sheathing; plank walks and flooring; fence posts, piles and poles; bridge and wharf timbers; conduits, culverts and silos; sluiceways and dams; ship and boat planking; sills, stringers and sleepers, and all heavy lumber exposed to rot.

Specifications—All woodwork on the above list shall be preserved with Cabot's Conservo Wood Preservative, with brush, mop or by dipping. Heat the Conservo if possible for greater penetration.

Covering Capacity—1 gal. covers 100 to 250 sq. ft. of surface, two coats, depending on character of wood and method of application.

Cabot's Flexiblac Protective Paint

An elastic black protective paint for all kinds of iron and steel and other metal work that is exposed to rust and corrosion. It forms an elastic, non-scaling film proof against electrolysis and the action of nearly all acids and gases.

Specifications—All exposed iron and steel shall be painted with Cabot's Flexiblac, two (three) coats.

Have surface dry and clean. Remove rust scales with scratch brush or scraper. Apply Flexiblac without heating or thinning.

CERTAIN-TEED PRODUCTS CORPORATION

PAINT AND VARNISH DIVISION

Manufacturers of Paints, Stains, Enamels, Varnishes, etc.

GENERAL OFFICES
100 East 42nd Street, NEW YORK, N. Y.

For Sales Offices, see Gypsum Plaster Pages
For Our Other Products, see Manufacturers' Index

Products

CERTAIN-TEED INTERIOR and EXTERIOR HOUSE PAINTS, FLAT WALL PAINTS, ENAMELS, KALSOMINE, OIL STAINS, SHINGLE STAINS, VARNISHES, LACQUERS and FLOOR PAINTS.

CERTAIN-TEED PAINT, ENAMEL, STAIN AND VARNISH PRODUCTS

Certain-teed paints, enamels, stains and varnishes include finishes for practically every interior and exterior purpose. This line represents highest quality—the direct result of care exercised by experts in the selection of raw materials and in the process of manufacture.

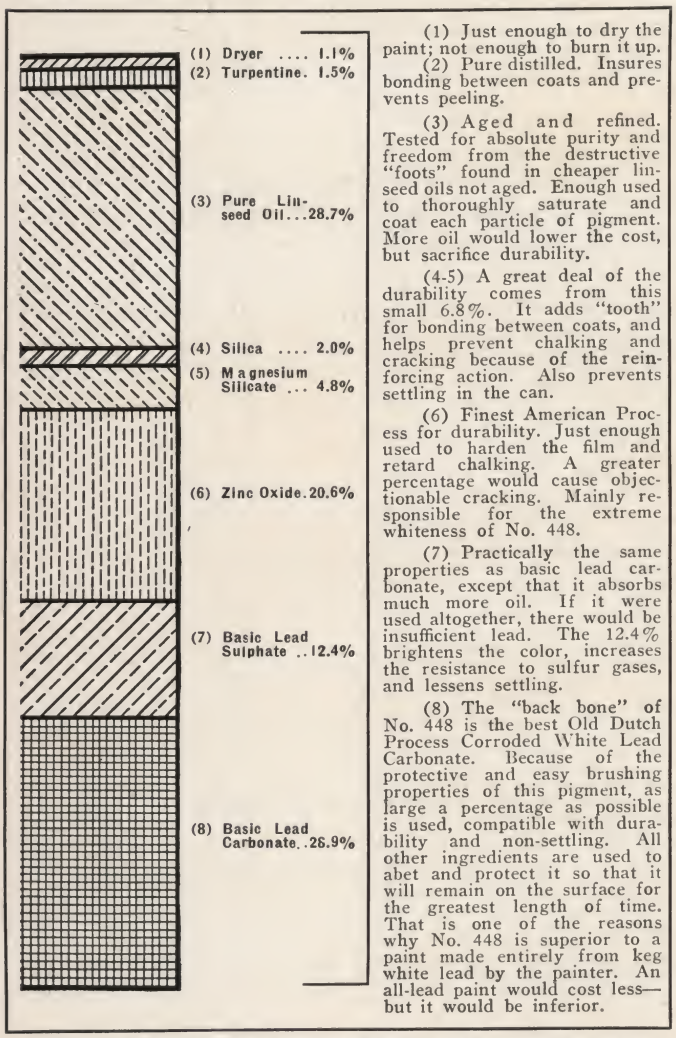


TRADE-MARK

Certain-teed paint and varnish products enjoy a country-wide reputation that has been built up through years of satisfactory service. Architects specify Certain-teed products because successful results bespeak good judgment in the wise selection of materials.

No. 448 Outside White

What is inside the paint can labeled No. 448 Outside White? In each can of No. 448 Outside White there are *18 lbs.* of the finest, purest ingredients scientifically combined to form this extra heavy, highly superior house paint. There is a reason—and a good one—for each ingredient used in this paint. There is also a good reason for using an exact percentage of that ingredient.



Graphic Analysis of Certain-teed No. 448 Outside White

Certain-teed House Paint (Exterior and Interior)

Exact combinations of the best ingredients, tested by expert chemists, precision in grinding and mixing, assure a superior product. It possesses durability, uniformity and permanence of colors. Spreads easily, covers generously, and keeps the ultimate cost of painting low when the expense of labor is compared with the cost of material over a period of years.

Certain-teed House Paint comes in liquid, paste and semi-paste form. The covering capacity is approximately 350 sq. ft. per gallon, two coats, depending on the surface.

Industrial Paints and Varnishes

In addition to a complete line of standard paints, varnishes, enamels, and stains, we manufacture every kind of related industrial finishes. Specifications are rigidly adhered to, and when supplied, samples will be matched exactly for color, uniformity and durability. Our Industrial Department is devoted to problems of this nature. It is composed of men, expert in their field, who are anxious to co-operate along every line.

Architects' Specifications

Complete Architects' Specifications for the application of paint and varnish, covering the extensive Certain-teed line, will be supplied upon request. These specifications cover every phase of the architect's problems in specifying the proper paints and varnishes, the varying conditions which will affect his decisions, and their proper applications.

Certain-teed Flat Wall Paint

A practical beautiful flat wall finish of the very best quality. It is soft and restful to the eyes, and free from even a suggestion of gloss or glare. Widely used in public buildings, office buildings, schools, homes, etc. It may be used on wood, metal ceilings, wall boards, etc., as well as for plastered walls and ceilings. It is sanitary and germproof, and the painted surfaces may be washed with soap and water.

Widely used as an undercoating for enamel finishes.

Covering Capacities—The covering capacity will vary according to the condition of the surface.

One gallon will cover with one coat approximately as follows:

On smooth plaster, metal ceilings and painted smooth surfaces, 700 to 800 square feet.

On rough plaster, wall board and over wallpaper or burlap 500 to 600 square feet.

Where wall size is mixed with the paint, estimate about 500 square feet per gallon, one coat.

Application—No size is needed on unpainted woodwork or metal ceilings. Sizing is required for new plaster work and for wall board. For old plaster kalsomined, wash off kalsomine or if it is tight, give one coat of Certain-teed Wall Size.

Certain-teed Mill White

A sanitary light reflecting finish for interior walls and ceilings of factories, shops, industrial plants, schools, office buildings, etc. Certain-teed Mill White is a durable oil paint, not a cold water paint, and will not wash off. It can be used on wood, plaster or brick surfaces. Has minimum of yellowing tendency and may be washed with soap and water. Made in flat and gloss finishes. The gloss finish has the greatest light reflecting properties, but does not produce a glare. Its smooth surface resists dust and dirt, and is more easily cleaned than the flat finish.

Soap or washing powder will not injure it. It is white when applied and stays white in use, thus overcoming the serious loss in lighting value encountered in finishes which yellow with age, readily catch dirt or rub off.

Specifications—The ceilings and walls of .... shall be painted with Certain-teed Mill White Paint. Where one coat is required, this shall be the gloss finish, but where two coats are required, the first coat shall be Certain-teed Mill White (Flat) Paint and the second coat shall be Certain-teed Mill White (Gloss) Paint. All paint shall be used from the manufacturer's original container and only as prescribed by the directions on the container. Old walls and ceilings painted white and not very soiled, shall be given one coat of gloss finish. New work shall be given two coats.

Certain-teed Penetrating Oil Stains

Highest quality penetrating oil stains for interior finishing on either hard or soft woods. They are in liquid form and penetrate deeply, but do not raise the grain of the wood. As they are clear and transparent, they show off the grain of the wood. Open grain woods must be filled over the stain and given time to dry before being shellacked. As the color of the stain will vary on different woods, because of the nature and color of the wood itself, samples of the stained finishes should be required before proceeding with the work. Covering capacity, 800 to 1000 sq. ft. per gallon, one coat, depending upon the wood to be stained. May be applied with a soft cloth or a brush.

Certain-teed Varnishes

Certain-teed Varnishes are unexcelled for quality and service. They successfully meet all the "freak" tests and the more important test of actual service. Extensive manufacturing facilities, high standard of quality, ample resources and the most competent technical skill combine to make them the best that can be manufactured. Covering capacity, all varnishes, about 600 to 700 sq. ft. per gallon, one coat.



Certain-teed Universal Varnish No. 900—For both exterior and interior use. Certain-teed Universal Varnish is made from the best grades of Congo gum, China wood oil, specially treated linseed oil, etc. The formula for making Certain-teed Universal is based upon many years of experience in varnish manufacture—extensive laboratory research and every conceivable test in actual use.

Certain-teed Universal is very pale in color—is heavy bodied, brushes easily, is self-leveling and dries quickly. A quality varnish that is built for sturdy endurance under all kinds of rough usage. For all interior and exterior work. Dries dust free in from 4 to 6 hours—hard overnight.

Certain-teed Interior Spar Varnish—This is a highest grade interior varnish for general use. It is not affected by contact with water. Has a durable and permanent gloss which can be rubbed to a dull finish and polished, if desired. Dries dust free in about 4 hours, and hard in 18 to 20 hours; rubbed in about 72 hours.

Certain-teed Cement Floor Paint

For preventing dusting, crumbling and disintegrating of cement floors. Very durable and furnishes a glossy damp-proof and sanitary surface on cement floors, which is easy to keep clean.

Covering capacity, approximately 500 sq. ft. per gallon, one coat. Dries in about 12 hours.

Two coats are recommended, allowing the first coat to become thoroughly dry.

CRAFTEX COMPANY

Manufacturers of Craftex, Sunflex and Other Paint Specialties

40 Central Street
BOSTON, MASS.

60 East 42nd Street
NEW YORK, N. Y.

INTERIOR FLAT WALL PAINT WITH 90% LIGHT REFLECTION
For Undercoating and Finish Coats

SUNFLEX

REG. U.S. PAT. OFF.

Characteristics

The following show why Sunflex is unique among paints.

Light Reflection—90%—Sunflex rates as high if not higher than other paints on this important point. Owners with Sunflex walls and ceilings report savings in lighting bills as high as 30%.

Never Yellows—Sunflex is made with non-yellowing binder. It stays white through exposure to air, light, moisture, and even resists effects of heat and certain fumes.

Permanence—Sunflex has unusual resistance to heat, moisture, steam, acid fumes, and other service factors that rapidly deteriorate most paints. It makes a permanent bond to any solid surface. Laundries, plants housing chemical processes, and others with similar conditions, use a great deal of Sunflex.

One-coat—Sunflex saves a coat of paint on most work, hiding plaster, concrete, brick, and other surfaces with a durable unifying coat of opaque white. Consequent savings in material and labor are worthy of consideration when cost is a factor.

Quick Drying—Sunflex dries dust-free in an hour without "painty" odor and is ideal for use in plants manufacturing food and other products liable to contamination from paint odor; and in hotels, stores, and factories where rapid painting with minimum interruption is desirable.

Over Damp Surfaces—*Sunflex has the unusual characteristic of allowing damp surfaces to "breathe." Moisture will dry through without affecting the bond or appearance of the paint. Concrete can be painted with a permanent coat of Sunflex shortly after the forms are removed. With Sunflex the architect can turn over a finished interior ready for immediate use, an important advantage when money is running low. Fresh plaster and other damp surfaces which will eventually dry out can also be painted with Sunflex.*



Low Cost—Sunflex effects savings in every step of a painting job. May be brushed or sprayed, flows easily, has exceptional coverage, is quickly applied, and dries without laps or brush marks. Compared with other paints, coat for coat Sunflex is a cost-cutter. It eliminates one coat of paint with further savings in stock and labor.

Containers and Use—Sunflex is a white paste, quickly prepared for use by adding water and stirring to painting consistency. Easily tinted with dry colors. CRAFTEX COMPANY'S Crafcolors (limeproof) are particularly satisfactory for tinting Sunflex.

It is impossible to produce as fine a material mixed on the job as paint mixed in the factory and wet-ground. However, for the convenience of painters who prefer job mixing, Sunflex is also prepared in powder form.

Tinted Sunflex—Sunflex is also supplied in the following standard tints: Ivory, Cream, Buff, Office Buff, Silver Gray, Umber Gray, Green, Orchid, and Black. CRAFTEX COMPANY will co-operate in making special colors of Tinted Sunflex. Send in sample and state your requirements.

Successful Record

Early Sunflex installations in 1923 are still in excellent condition. Its merit is shown by repeat orders and use in such buildings as the following:

Carew Tower, Cincinnati, Ohio
Starrett-Lehigh Building, New York, N. Y.
Boston Garden, Boston, Mass.
Criminal Courts Building, New Orleans, La.
Yale University, New Haven, Conn.
Mayo Clinic, Rochester, Minn.
Celotex Company, Chicago, Ill.
New School for Social Research, New York, N. Y.
Oklahoma Biltmore Hotel, Oklahoma City, Okla.
Western Electric Co., Hawthorne, Ill.
Globe-Democrat Building, St. Louis, Mo.
City Auditorium, Charlotte, N. C.
Morton Salt Co., Chicago, Ill.
Vortex Cup Co., Chicago, Ill.
Thompson's Spa, Boston, Mass.

A WATER MIXED PLASTIC PAINT FOR FUTURE SURFACES

CRAFTEX

Reputation and Service

Craftex Reputation—Craftex, the *first* plastic paint, has been used by architects since 1911. It should always be remembered that "Craftex" is a registered trade name and applies *only* to the plastic paint made by CRAFTEX COMPANY.

Architectural Service—CRAFTEX COMPANY maintains exhibits at its offices in Boston and New York, where a complete range of textures and finishes may be inspected. An Architectural Service Department is ready at all times to co-operate with architects in developing new texture effects and submitting samples to meet specific requirements.

Applications

Preparation of Surfaces—Craftex can be applied over any surface that can be painted. It bonds permanently with the surface and lasts indefinitely, practically ending redecorating expense. Detailed specifications for the application of Craftex over wall board, plaster, water color, concrete, brick, cinder blocks, or any other surface will be supplied by CRAFTEX COMPANY on request.

One-coat and Glaze Coat Craftex—***One-coat***—An application of Craftex alone, without sizing or glazing. Craftex is applied already tinted and then textured as desired.

Glaze Coat—A Craftex texture base, sized with Craftexsize and glazed with Craftcoat which is mixed with one or more colors.

Modernistic Wall Finishes—Architects find Craftex invaluable not only in reproducing hand-palmed, water-floated, troweled, and stone effects, but also in creating entirely new and distinctive effects in color and texture.

Craftex water-float and other smooth type finishes are suitable for almost every type of building. Stencils, sgraffito, or modeled low relief work make Craftex especially suited for use in modernistic decoration.

Short Form Specification

The following described surfaces shall receive Craftex, as manufactured by CRAFTEX COMPANY, Boston, Mass., to be applied in accordance with their printed directions which hereby become a part of this specification, in the textures and colors described below.

Other Products

Craftexsize—a water mixed size of unusually high grade—for general use as a film size; Craftcoat, a glaze for use over Craftex and Craftexsize, and for general glazing purposes. Also Shadowall, a low priced plastic paint for textured walls.



Craftex Bag

Craftex is put up in heavy bags with the label and amount by weight printed on every bag. *Only Genuine Craftex carries the Craftex name and trade-mark (shown at right).*

CREO-DIPT WHITE

Double Strength—for Flat White Effect on Shingles, Siding, Brick, Stone, Stucco

CREO-DIPT COMPANY, INC.
NORTH TONAWANDA, N. Y.

FACTORIES, SALES OFFICES OR WAREHOUSES IN ALL PRINCIPAL CITIES

Other Creo-Dipt Products: Creo-Dipt Stained Shingles (Wood), Creo-Dipt Mohawk Shingles (Fireproof—made of Cement and Asbestos), Creo-Dipt Fireproof Shingles (Made of Cement and Asbestos), Creo-Dipt Asphalt Shingles, Creo-Dipt Brick (Fireproof—made of Cement and Asbestos), Creo-Dipt Building Papers

See Manufacturers' Index for Information on other Products

CREO-DIPT WHITE (Double Strength)

Natures and Uses

New Creo-Dipt White is a special brushcoat preparation that gives the true Colonial flat white effect. It can be used only on exterior surfaces. On shingles, siding, stucco, stone, brick, or cement, it gives the soft, velvety appearance of a wash combined with extraordinary wear resisting qualities. Obtainable in flat white or tints of ivory, cream, buff and similar shades, it can also be tinted to any desired shade by a painter using ordinary oil paints.

Quality of Creo-Dipt White

Creo-Dipt White is a true architectural finish. It avoids the "painty" look. It has maximum hiding qualities. It remains white and resists the darkening effect of industrial gases.

Superiority of Creo-Dipt White

The superiority of Creo-Dipt White lies in its hiding qualities, ease of application, greater covering capacity, intense whiteness and resistance to weather.

Creo-Dipt White is unusually opaque. You can test this for yourself by brushing Creo-Dipt White and a similar product side by side over a black and white background.

The New Creo-Dipt White flows readily off the brush. It does not stick or drag, making it easy to do a neat, workmanlike job without lap or brush marks. Creo-Dipt White covers approximately 250 sq. ft. two brushcoats or 350 sq. ft. one brushcoat.

Creo-Dipt White is so white that other whites look gray alongside it. Accelerated weathering tests show that Creo-Dipt White is still in as good condition after five years' exposure.

Creo-Dipt White weathers by gradual chalking which produces an ideal surface for repainting and will not peel nor alligator nor will it chalk excessively. Creo-Dipt White resists ocean front climate and salt spray—which ruin ordinary paints rapidly and completely. A large number of high strength pigments protect the oil from the ravages of salt spray wind, snow, rain or sleet and the destructive ultra-violet rays present in all sunlight.

Application

If Creo-Dipt White is to be used on untreated siding, lumber, brick, stone or stucco whether interior or exterior, the surface to which it is to be applied should first have a priming coat consisting of four parts Creo-Dipt White to one part boiled or raw linseed oil. If raw linseed oil is used a small amount of drier should be added. If boiled linseed oil is used, no drier is necessary. After the priming coat is thoroughly dry, the Creo-Dipt White should be applied.

Creo-Dipt Shingles to be finished with Creo-Dipt White are furnished treated with No. 207, a priming coat. They are given one coat of Creo-Dipt White after they are applied.

Detailed directions for the application of Creo-Dipt White are printed on the label of each can. For further information write us, or look for the name Creo-Dipt in your telephone book.

Creo-Dipt Stains

In addition to the new Creo-Dipt White, we manufacture Creo-Dipt Stains for recoloring and preserving old shingles. Creo-Dipt Stains come in the same wide variety of colors as Creo-Dipt Stained Shingles. We also manufacture a special stain for Asbestos Shingle and Concrete Tile roofs. Look for Creo-Dipt in your telephone book or write to Creo-Dipt Company, Inc., North Tonawanda, N. Y. for complete information.



Charming Kansas City Residence

HARRY L. WAGNER, Architect used Creo-Dipt White on the chimney and brickwork, Creo-Dipt Stained Shingles (wood) on both roof and sidewalls

JOSEPH DIXON CRUCIBLE COMPANY

ESTABLISHED 1827

JERSEY CITY, N. J.

DISTRICT SALES OFFICES

NEW YORK, N. Y., 68 Reade Street
SAN FRANCISCO, CAL., 444 Market Street
BOSTON, MASS., 80 Federal Street
PHILADELPHIA, PA., 612 Public Ledger Building
CHICAGO, ILL., Builders' Building

DIXON'S PAINTS



DIXON'S INDUSTRIAL PAINTS *(Flake Silica-Graphite)*—Red Lead Graphite Primer and colors.

DIXON'S ALUMINUM PAINTS—Bright Aluminum; Extra Brilliant Aluminum Bronze Powder; Heat-resisting Aluminum; Aluminum Sealer.

DIXON'S HEAT RESISTING BLACK.

DIXON'S MAINTENANCE FLOOR PAINTS.

DIXSPAR VARNISHES—Exterior, Floor and Aluminum Vehicle.



D X N
TRADE MARK



For over one hundred years the business of the JOSEPH DIXON CRUCIBLE COMPANY has followed every ramification of graphite use with every known grade and form of graphite passing through its laboratories.

The company is, therefore, in position to select and use that kind of graphite best suited to any particular purpose. That this selection is made with the utmost care and with due regard to the purpose for which the graphite is intended is evidenced by the high character and quality of Dixon's products generally and the popularity of *Dixon's Paints* in widely diversified fields.



DIXON'S INDUSTRIAL PAINTS

(Flake Silica-Graphite)

How Dixon Discovered the Value of Flake Graphite as a Paint Pigment

Over seventy years ago, alterations in the mining plant of the JOSEPH DIXON CRUCIBLE COMPANY at Ticonderoga, N. Y., resulted in the removal of a large amount of good machinery. As it was necessary to store it out of doors and protect it from rusting, the superintendent proceeded to paint it with a mixture of oxide of iron and linseed oil.

The supply of oxide giving out, he thought to use some of the *flake graphite* which was a product of the plant. Two years after, examination of the surface showed that, though still intact, the oxide of iron paint had become exceedingly dry and brittle, while the *flake graphite* paint had, to a wonderful extent, retained its original toughness and elasticity. *On many pieces the paint remained in good condition for eighteen years.*

We use today precisely the same material used in this trial so long ago, and never have we found any cause to change our views as to its absolute superiority as a protective coating on wood and metal surfaces.

Flake Silica-Graphite Is Favored by the United States Department of Commerce

The United States Department of Commerce, Bureau of Mines, in Information Circular No. 6123, May 1929, under caption "Pigments and Paints" commends the use of *flake silica-graphite* as a paint pigment because of its opacity and great resistance to deterioration. This statement literally substantiates the claims made by the JOSEPH DIXON CRUCIBLE COMPANY respecting the wearing and protective qualities of Dixon's Industrial Paints in which the pigment used is *flake silica-graphite.*



The Four Horsemen of Paint Destruction

Fumes—Sun—Moisture—Time

In vain do these rough riders endeavor to break down the defensive armor of *natural flake silica-graphite pigment and boiled linseed oil vehicle* of Dixon's Industrial Paints. Natural flake graphite undergoes no chemical change in use, is immune to acids and alkalies and is water-repellent

The Physical Properties of a Silica-Graphite Protective Paint

There are two components in paint—the *pigment* and the *vehicle.* They are of prime importance, for upon them depend the life and wearing qualities of the paint.

Linseed Oil Vehicle—Of all paint vehicles linseed oil is recognized as one of the most suitable because of its ability to withstand wear and exposure. When dry, linseed oil adheres strongly to surfaces upon which it is applied, and even when used alone it offers a certain amount of protection. However, when so used, the film is thin and soon wears away under the influence of the elements and the abrasive action of dust, cinders, etc.

In order to make the film thicker so as to furnish a greater amount of wear resistance, a pigment is added and the resistance to wear is increased in direct proportion to the thickness of this pigment.

Flake Silica-Graphite Pigment—As a paint pigment, graphite is absolutely inert. It is not affected by the action of even the strongest acids or alkalis. It does not undergo any chemical change in use and will not affect the natural resiliency of the oil vehicle.

Natural *flake* graphite, however, needs something to give it further endurance and for that reason we call on the aid of *silica.* The peculiarity of Dixon's *Silica-Graphite* Paint is that the silica is mined with the graphite and is largely an integral part of the graphite itself.

Silica is sometimes used as a paint pigment but it has no covering power and is hard, rough and transparent while graphite is soft, unctuous and opaque.

Silica and flake graphite are two most excellent paint pigments possessing in the

greatest possible degree those most necessary characteristics—inertness and low specific gravity. But to be perfect, each needs just that amount of improvement which the presence of the other affords.

Nature's mixture of *flake silica-graphite* is obtained from our own mines and affords a most superior paint film as compared with a pigment where silica is mechanically added to the graphite.

Advantages of Using Flake Silica-Graphite Paints

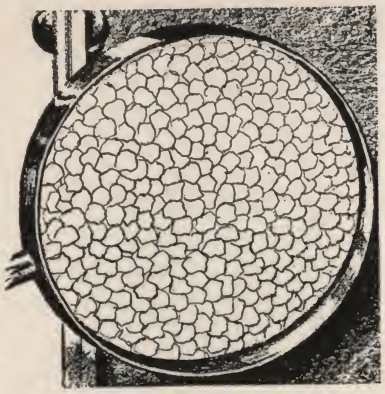
(1) They are easier to apply, the unctuous peculiarity of flake graphite giving an ease of brushing not to be found in other paints.

(2) They are stronger in covering quality, particularly in the darker shades, the tendency of graphite as a paint pigment being toward heavy opacity.

(3) They cover more surface per gallon because of the assistance graphite lends in smoothness, without depreciating the protection of the paint film.

(4) They are more waterproof, graphite having waterproof qualities unsurpassed by any other pigment.

Dixon's Industrial Paints are, therefore, more durable and afford maximum protection because of the *flake silica-graphite* pigment.



Flat Flakes of Silica-Graphite Overlap Like the Scales of a Fish

Cemented together by a tough elastic "skin" of pure boiled linseed oil, these flakes give to *Dixon's Industrial Paints* a striking resemblance to nature's own best protection against water—the armor of a fish

Covering Capacity

Dixon's Industrial Paints are strong in covering power and have a spreading capacity of 450 to 500 sq. ft. to the gallon.

Dixon's Red Lead Graphite Primer No. 101

Composed of red lead, *flake silica-graphite,* a high grade oxide of iron and tested boiled linseed oil, it meets the requirements of those inclined toward straight red lead because of its strong adherence to metal and its long life.

The unctuous quality of the *flake graphite* prevents "dragging" and destruction of brushes. Because of the nature of its pigment and vehicle, this primer will not become hard and brittle with resultant chipping and scaling, but retains its elasticity.

Having a covering capacity of 450 sq. ft. to the gallon, it is most economical either from a standpoint of cost per gallon or years of service.

A metal surface finished with a coat of Dixon's Red Lead Graphite Primer No. 101, followed by two coats of Dixon's Industrial Paint *(flake silica-graphite)* will have the best of protection for a period of 9½ years, on the average, without renewal.

Hundreds or testimonials submitted by engineers, chemists, contractors, etc., substantiate this claim.

With many railroads whose paint selections are governed *by their own formulations,* Dixon's Red Lead Graphite Primer is the standard or the approved alternate.

Where the Use of Dixon's Industrial Paint is Recommended

For finishing outdoor metal and wood surfaces where unusual wear or climatic conditions present a disturbing maintenance problem. These paints are waterproof in the rigid sense of the word. Changes in temperature do not affect them.

A protective coating for:

Structural Steel	Oil Tanks	Steel and Wood Barges
Water Conduits	Tank Cars	Condensers
Grain Elevators	Water Tanks	Transformers
Roofs	Coal Tipples	Excavating and Hauling Machinery
Bridges	Iron Fences	
Boilers	Lamp Posts	
Gas Tanks	*Smokestacks	
	Marine Work	

*As a finish for smokestacks or heated surfaces Dixon's Industrial Paints are without peer, resisting heat up to 500° F.

COLORS

Red Lead Graphite Primer
Standard Oxide Red
Extra Light Gray
Medium Gray
Light Gray
Battleship Gray
Dark Gray
Black
Dark Red
Light Green
Dark Green
Aluminum-Graphite (Dark)
Aluminum-Graphite (Light)
Bright Aluminum

For Color Chips, see page 5



Florianapolis Bridge, South America



Cooper River Bridge, Charleston, S. C.



McGraw-Hill Building, New York, N. Y.



Newark Bay Bridge, C. R. R. of N. J., Newark, N. J.



Suisun Bridge, San Francisco, Cal.

A Few Instances Where Dixon's Industrial Paints Supply Absolute Protection

DIXON'S ALUMINUM PAINTS

Dixon's Aluminum Paints have won universal acceptance because of their brilliance, waterproofness, resistance to the elements, covering capacity and comparative freedom from precipitation of the pigment. In Dixon's Aluminum Paints a tough marine spar varnish is used which is unexcelled for resistance to wear. Being fume and acidproof, these paints render the best of service on exposed work of all kinds.

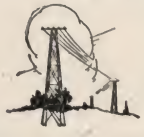
A few uses of these paints may be enumerated as follows:

Gas Holders
Bridges
Hydrants
Grain Elevators
Iron Fences
Machinery
Mining Equipment
Trolley Poles
Smokestacks
Towers
Tank Cars
Oil and Gasoline Storage Tanks
Refrigerator Cars
Guide Frames
Lamp Posts
Generators
Silos
Purifiers
Pipe Lines
Derricks
Mail Boxes
Fire and Rolling Doors
Engine and Boiler Room Equipment
Steam Pipes
Laundries
Metal Sash
Structural Steel
Signs
Priming Coat on Wood
Marine Work
Grilles and Ornamental Iron
Interior Decoration
Window Frames
Roofs
Gutters
Leaders
Standpipes











Dixon's Bright Aluminum No. 113

The vehicle used is a tough marine spar varnish giving great resistance to the elements and insuring life and brightness to the *straight aluminum pigment.*

This paint will not dull or take on a brownish cast with the readiness of ordinary aluminum paints nor will its pigment precipitate as rapidly. Mixes easily at all times.

Dixon's Bright Aluminum No. 113A

This paint differs from Dixon's Bright Aluminum No. 113 only in the fact that the aluminum powder and the vehicle are furnished in separate compartments of duplex containers. No. 113A, in this type container, meets all federal and state specifications.

Dixon's Aluminum-Graphite No. 111

Prepared with the same care as our other *flake silica-graphite* paints, it has established a reputation for quality and durability.

The pigment is flake aluminum and *flake silica-graphite.* The similarity of their flake structure permits them to lap one over another like fish scales forming a film of great elasticity and durability. So closely do they overlap that it is impossible for moisture to penetrate to the undersurface. The vehicle is a tough marine spar varnish.

Gases, acids, smoke and other deteriorating influences have practically no effect on surfaces protected by Dixon's Aluminum-Graphite and it is also highly resistant to the effects of the elements. Its unusual durability and low cost per year of service is due to the overlapping of the flakes in a bond of durable spar varnish. Because of the graphite component, it brushes easily and covers solidly in one coat.

Dixon's Extra Brilliant Aluminum Bronze Powder No. 88

This product is guaranteed to be chemically pure and of the highest quality as an ingredient for paint and enamel. It meets the rigid specifications of federal, state and municipal departments and conforms in chemical analysis with A.S.T.M. standards (D-266-28T). Also Navy Dept. Spec. 52-A1C and War Dept. Spec. 3-44B.

We particularly recommend Dixspar Aluminum Vehicle as a mixing varnish with this powder. It is tough, elastic and waterproof and may be used on steel, wood, cement and composition surfaces. Further information concerning Dixspar Aluminum Vehicle will be found on page 8.

Heat Resisting Aluminum Paint No. 226A

A special aluminum paint for use on metal surfaces where the heat exceeds 450° F. It provides a permanent, brilliant and attractive finish that will withstand the rigors of intense heat up to 850° F.

Furnished in duplex containers of 1 and 5 gal. capacity. Also in drums with aluminum powder (Dixon's No. 88) separate.

Dixon's Aluminum Sealer

A priming and sealing medium for use on plaster, brick, stucco and composition surfaces where an aluminum finish is desired.

Dixon's Aluminum Sealer stops suction and insures maximum satisfaction when used as an undercoat for Dixon's Bright Aluminum No. 113 or 113A.

Dixon's Aluminum Paint in the Oil and Gas Field

The use of Dixon's Aluminum Paints has become standard practice with many of the foremost companies in this field. The value of aluminum as a reflective and protective paint and its ability to lessen evaporation losses is well established. This was conclusively demonstrated by the results (shown below) of a test recently conducted by one of the leading oil companies of Texas.







Medium	Rise in degrees, F.
Tin Plate	19.8
Aluminum Paint (Varnish Vehicle)	20.5
Aluminum Paint (One-half lead or zinc and one-half aluminum powder)	20.8
White Paint	22.5
Light Cream Paint	23.0
Light Pink Paint	23.7
Light Blue Paint	24.3
Light Gray Paint	26.3
Light Green Paint	25.6
Red Iron Oxide	29.7
Dark Prussian Blue	39.9
Black Paint	54.0

In addition to very important savings achieved through reduced evaporation, Dixon's Aluminum Paints provide an attractive appearance and insure long life to the equipment.

SPECIFICATIONS FOR USE OF DIXON'S INDUSTRIAL PAINTS

Flake Silica-Graphite and Aluminum Paints

In preparing the following specifications covering the application of Dixon's Industrial Paints we have spared no effort to insure their technical and practical correctness.

Each specification is based on our observation during 70 years in the manufacture of metal protective paints and is placed before the architect and engineer with the assurance that in following any specification herein they may feel fully confident that the results therefrom will be of the most satisfactory nature.

Dixon's Industrial Paints *(flake silica-graphite)* are recognized the world over for their protective value and in specifying them the architect or engineer insures for his client permanency of the steel and iron work.

Specification Schedule

Steel Bridges.....*No. 1*
Structural Steel.....*No. 2*
Bright Aluminum on Exposed Interior or Exterior Steel Surfaces.....*No. 3*
Miscellaneous Iron, Ornamental Iron, Steel Partitions, Steel Windows, Kalamein Work, etc.....*No. 4*
Bright Aluminum for Walls, etc.....*No. 5*
Water Tanks, Smokestacks, Gas Holders, Power Plant Equipment, etc.....*No. 6*
Wire Work.....*No. 7*
Maintenance Painting.....*No. 8*

(For Color Chips, see page 7)

General Conditions

Materials—All paint materials shall be delivered to the building site in the original unbroken containers bearing the manufacturer's stamp or label thereon.

The top of the container to be removed on the site of the work, and the paint properly stirred before being used.

The use of adulterants at any stage of the work is strictly prohibited, nor shall materials be thinned or changed in any way other than specified.

Workmanship—All materials shall be applied by skilled mechanics. Paint shall be evenly spread and thoroughly brushed out. All workmanship shall be executed in accordance with the best practices.

All surfaces to be painted shall be dry and free from foreign matter, dirt, cement, grease, oil, scale, etc.

No paint shall be applied until the preceding coat is thoroughly dry.

Specification No. 1

Steel Bridges

Shop Coat—All steel work, including iron and cast steel, shall be thoroughly cleaned of all scale, rust, dirt, grease or other foreign particles and shall be given a shop coat of Dixon's Red Lead Graphite Primer No. 101. Where surfaces of riveted work come in contact they shall be painted with the same material before being assembled.

Field Coat—After erection, all damaged surfaces of shop coat, all shop marks, rivets, bolts, etc., shall be touched up with Dixon's Red Lead Graphite Primer No. 101. A first field coat of Dixon's Industrial Paint of (approved color) shall then be applied. After the first coat is thoroughly dry, a second field coat shall be applied, a difference in shade to be observed between the first and second field coats to insure proper coverage.

Specification No. 2

Structural Steel

Shop Coat—All structural steel work, before leaving the shop shall be cleaned of all scale, rust, dirt, grease or other foreign particles and shall be given one shop coat of Dixon's Red Lead Graphite Primer No. 101. Where surfaces of riveted work come in contact they shall be painted with the same material before being assembled.

Field Coat—After erection all damaged surfaces of shop coat, all shop marks, rivets, bolts, etc., shall be touched up with Dixon's Red Lead Graphite Primer No. 101, and then all encased surfaces of the steel work shall be given a coat of Dixon's Black Paint (Alkali Resisting) No. 333.

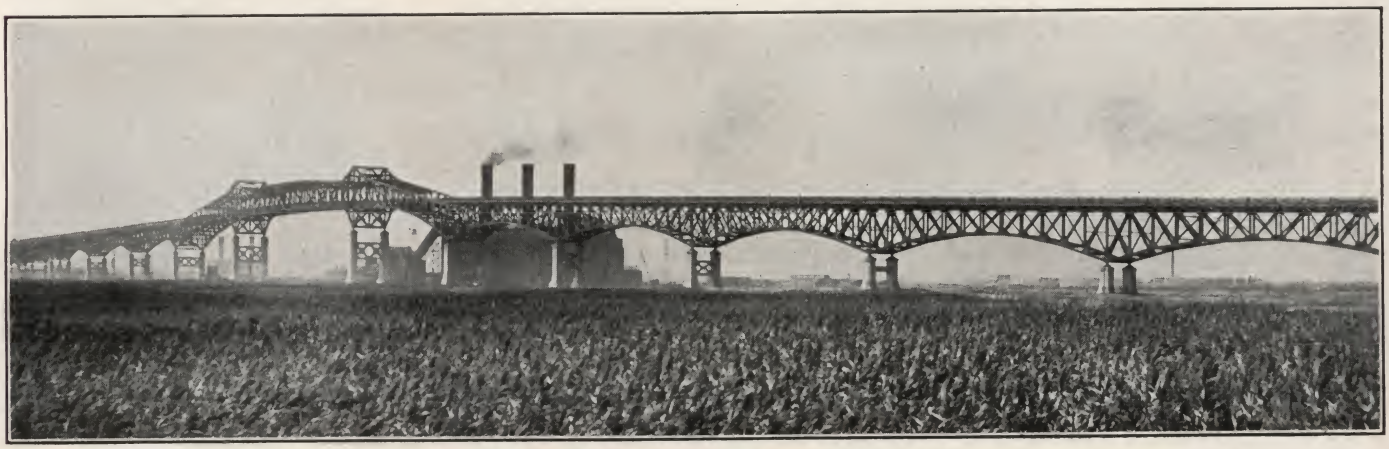
Miscellaneous—All grillage shall receive one coat of Dixon's Red Lead Graphite Primer No. 101, and one coat of Dixon's Black Paint (Alkali Resisting) No. 333 before setting.

Specification No. 3

Bright Aluminum on Exposed Interior or Exterior Steel Surfaces

Shop Coat—All steel work, before leaving the shop shall be cleaned of all scale, rust, dirt, grease or other foreign particles and shall be given one shop coat of Dixon's Red Lead Graphite Primer No. 101. Where surfaces of riveted work come in contact they shall be painted with the same material before being assembled.

Field Coat—After erection all damaged surfaces of shop coat, all shop marks, rivets, bolts, etc., shall be touched up with Dixon's Red Lead Graphite Primer No. 101, and then all surfaces of steel work shall be given two coats of Dixon's Bright Aluminum No. 113 (ready mixed) or Dixon's Bright Aluminum No. 113A (powder and vehicle separate).



Span of Route 25 Bridge Over Hackensack River, N. J.
Primed and finished with Dixon's *Silica-Graphite* Paints

Specification No. 4

Miscellaneous Iron, Ornamental Iron, Steel Partitions, Steel Windows, Kalamein Work, Etc.

General—Before shop coat is applied, all steel and iron work shall be thoroughly cleaned of all scale, rust, dirt, grease or other foreign particles. Before the field coat is applied all damaged surfaces of shop coat, all shop marks, rivets, bolts, etc., shall be retouched with the same material used for the shop coat, which is to be Dixon's Red Lead Graphite Primer No. 101.

Miscellaneous Iron—All miscellaneous iron work, such as steel lintels, steel bucks, anchors, brackets, etc., shall receive one shop coat of Dixon's Red Lead Graphite Primer No. 101, and one field coat of Dixon's Standard Oxide Red No. 114.

Note: All exposed miscellaneous iron, such as window lintels, etc., shall receive an additional coat of lead and oil paint as specified under "Painting."

Ornamental Iron—All ornamental iron, such as railings, fencing, window grilles, flagpoles, etc., shall receive one shop coat of Dixon's Red Lead Graphite Primer No. 101, and one field coat of Dixon's Standard Oxide Red No. 114. The final coat shall be Dixon's Industrial Paint of (approved color).

Note: When colors to harmonize with surrounding woodwork, etc., are desired, the final coat should be lead and oil paint as specified under "Painting."

Steel Partitions—Steel partitions, such as metal toilet partitions, etc., shall receive one shop coat of Dixon's Red Lead Graphite Primer No. 101, and two coats of Dixon's Olive Green No. 110.

Steel Windows—Steel windows shall receive one shop coat of Dixon's Red Lead Graphite Primer No. 101, and one shop coat of Dixon's Standard Oxide Red No. 114. The final coat shall be lead and oil paint as specified under "Painting."

Kalamein Work—All kalamein work shall receive one shop coat of Dixon's Red Lead Graphite Primer No. 101. The final coats shall be applied as specified under "Painting."



Equitable Trust Company, New York, N. Y.
Trowbridge & Livingston, Architects
Thompson, Starrett Co., Contractors

Specification No. 5

Dixon's Bright Aluminum for Walls, Etc.

Note: Dixon's Bright Aluminum No. 113 is highly recommended for the interiors of workrooms and industrial buildings because of its light reflecting qualities. It does not tarnish, is not affected by sulphurous gases and can be washed with soap and water.

Priming Coat—All plaster surfaces of walls, columns and ceilings shall receive a coat of primer having lime resisting qualities. It shall be applied in accordance with the printed instructions of the manufacturer and shall not be recoated until it has dried hard and absolutely free from tack.

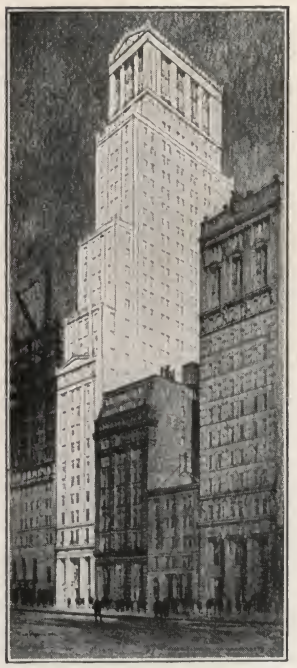
All metal surfaces shall be primed with Dixon's Red Lead Graphite Primer No. 101.

Aluminum Coat—All plastered surfaces of walls, columns and ceilings and all wood and metal trim and doors shall be painted with two coats of Dixon's Bright Aluminum No. 113.

Specification No. 6

Water Tanks, Smokestacks, Gas Holders, Power Plant Equipment, Etc.

Shop Coat—All steel work, including cast iron and cast steel, shall be thoroughly cleaned of scale, rust, dirt, grease

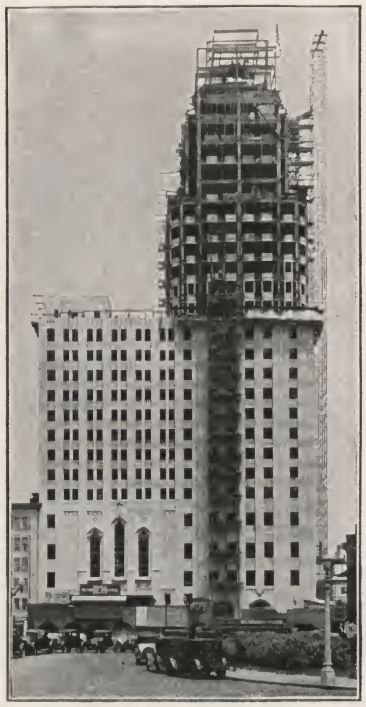


National City Company, New York, N. Y.
McKim, Mead & White, Architects
Geo. A. Fuller Co., Contractors



Painting the Menai Bridge with Dixon's Industrial Paint

This old English suspension bridge carries the Holyhead road from Bangor over the Menai Straits in North Wales. Designed by T. Telford and completed in 1826, it serves to perpetuate the fame of this pioneer bridge builder, and it is significant that *Dixon's Industrial Paint* has now been chosen to protect it against the elements



Hotel and Temple M. E. Church, San Francisco, Cal.
Lewis P. Hobart, Architect
McClintic-Marshall Co., Contractors

For Color Chips, see page 7

and other foreign particles and shall be given one shop coat of Dixon's Red Lead Graphite Primer No. 101.

Where surfaces of riveted work come in contact they shall be painted with the same material before being assembled.

Field Coat—After erection, all damaged surfaces of shop coat, all shop marks, rivets, bolts, etc., shall be touched up with Dixon's Red Lead Graphite Primer No. 101. A first field coat of Dixon's Industrial Paint of (approved color) shall then be applied. After the first coat is thoroughly dry, a second field coat shall be applied, a difference in shade to be observed between the first and second field coats to insure proper coverage.

Note: For smokestacks and other heated surfaces we recommend Dixon's Black No. 108, or Dixon's Natural No. 107. Both paints will withstand heat up to 500° F. In repaint work two coats are required for best results, and on new work, three coats, including the priming coat (Dixon's Red Lead Graphite Primer No. 101).

Specification No. 7

Wire Work

All uncoated wire work, including frames, fixtures, etc., shall receive one coat of Dixon's Red Lead Graphite Primer No. 101, and two coats of Dixon's Bright Aluminum No. 113.

All galvanized iron wire work shall receive one coat of Dixon's Red Lead Graphite Primer No. 101 and two coats of Dixon's Bright Aluminum No. 113.

Specification No. 8

Maintenance Painting

Cleaning—All broken or blistered paint, all rust, grease and dirt, must be removed by wire brushes, scrapers, blow-torch, or by sandblasting with fine sand. The method to be selected and made part of the contract. After this preparatory work, exposed parts of the surface to be "spot-coated" with Dixon's Red Lead Graphite Primer No. 101.

Repainting—All surfaces shall be given two coats of Dixon's Industrial Paint of (approved color). The second coat to be applied when the first is thoroughly dry and to be slightly different in color to insure proper coverage. Surfaces must be perfectly dry when painted.

Galvanized Iron or Tin Roofing—Before Dixon's Industrial Paint is applied to a new roof, the surface should be thoroughly scoured with a solution of sal-soda. When dry, a first coat of Dixon's Red Lead Graphite Primer No. 101 should be applied, followed by a second and third coat of Dixon's Industrial Paint of (approved color).

Note: The same qualities which make Dixon's Industrial Paints so efficient for other exposed surfaces account for its great protection to roofs—a particularly inert pigment and a linseed oil vehicle. We recommend three coats for new metal roofs—the first coat to be Dixon's Red Lead Graphite Primer No. 101 followed by two coats of Dixon's Industrial Paint. On previously painted metal roofs, two coats of Dixon's Industrial Paint is sufficient. This paint is also suitable for canvas and shingle roofs. Where shingles are dry, they should receive a first coat of linseed oil, otherwise they will quickly absorb oil from the paint, leaving the pigment without sufficient binding material. Use Dixon's Light or Dark Green for beautifying effect or Dixon's Natural Color for slate effect.

A FEW NOTABLE STRUCTURES ON WHICH DIXON'S INDUSTRIAL PAINTS WERE SPECIFIED AND USED

Following are the names of a few of the many nationally known buildings, the steel work of which is protected with Dixon's Red Lead-Graphite Primer and Dixon's Industrial *(silica-graphite)* Paints.

Architects and engineers specify Dixon's Industrial Paints because of their *first quality* and their suitability for protection of steel structures—their reputation for economy covers a period of over 70 years.

Dixon's Red Lead-Graphite Primer, Dixon's *Silica-Graphite* Paints and Dixon's Aluminum Paints are reliable—*they last.* They satisfy architects, engineers and owners and are universally recognized as being low in cost per year of service.

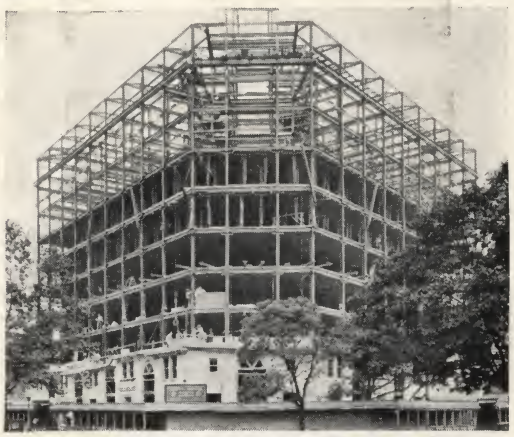
ALBANY, N. Y.
Ten Eyck Hotel and Addition
ALLENTOWN, PA.
Y. M. C. A. Bldg.
ATLANTA, GA.
Atlanta Terminal
Southern Bell Tel. & Tel. Co. Bldg.
BALTIMORE, MD.
Baltimore City Docks
Fidelity Title & Trust Co. Bldg.
First National Bank Bldg.
C. R. Ross & Co. Warehouse
Trinity Church
BAYONNE, N. J.
American Radiator Co. Plant
Babcock & Wilcox Co. Plant
BETHLEHEM, PA.
Bethlehem Steel Co. Bldgs.
BOSTON, MASS.
Boston Terminal Trainshed
Copley-Plaza Hotel
Shawmut National Bank Bldg.
BROOKLYN, N. Y.
Bush Terminal Bldg.
N. Y. Dock Co. Warehouse
St. George Hotel
Williamsburg Trust Co. Bldg.
BUFFALO, N. Y.
New York Telephone Bldg.
State Normal School Bldg.



N. W. Ayer & Son, Inc., Philadelphia, Pa.
R. B. BENCKERT, Architect
McCLINTIC-MARSHALL CO., Fabricators

CAMDEN, N. J.
Victor Co. Building No. 7
Y. M. C. A. Bldg.
CHARLESTON, S. C.
Union Station
CHICAGO, ILL.
Field Building
Fair Department Store
Marshall Field Co. Warehouse
CLEVELAND, OHIO
City Hall
Willys-Overland Co. Bldg.
GALVESTON, TEX.
Tyler High School
HACKENSACK, N. J.
Public Service Bldg.
JERSEY CITY, N. J.
Hudson County Court House
Colgate Bldg.
National Grocery Co. Warehouse
NEWARK, N. J.
American National Bank Bldg.
City Hall
Normal School Bldg.
NEW YORK, N. Y.
Over 150 prominent structures
PHILADELPHIA, PA.
N. W. Ayer & Son Bldg.
Link Belt Co. Bldg.
Ritz-Carlton Hotel
West Philadelphia Armory
PITTSBURGH, PA.
Oliver Iron & Steel Co. Bldg.
Victoria Theatre
Wabash & Pitts. Trainshed and Term. Bldgs.
SAN FRANCISCO, CAL.
State Capitol Bldg.
J. A. Roebling & Son's Bldg.
Wells Fargo Express Co. Bldg.

Note: We have prepared an interesting booklet containing the names of hundreds of buildings—*commercial, industrial* and *governmental* structures—on which Dixon's Paints were used. A copy will gladly be furnished on request.



Acacia Mutual Life Association, Washington, D. C.
HOGGSON BROS., Engineers and Contractors
BARBER & ROSS, INC., Fabricators

DIXON'S HEAT RESISTING BLACK NO. 1

A silica-graphite paint. Recommended for use on metal surfaces when the heat obtaining is in excess of 500° F. No thinning is required—it should be used as it comes from the can after proper agitation.

On surfaces where the heat does not exceed 500° F. Dixon's Industrial Black No. 108 is recommended.

Heat Resisting Black No. 1 is furnished in all sizes—from 1 gal. cans to drums.

DIXON'S INDUSTRIAL PAINTS


Red Lead Graphite Primer—No. 101

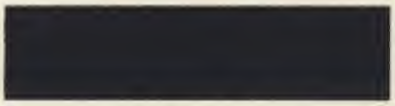

Standard Oxide Red—No. 114


Extra Light Gray—No. 102

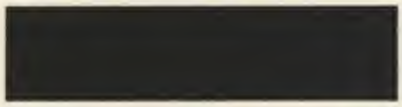

Medium Gray—No. 105


Black—No. 108


Dark Red—No. 103


Light Gray—No. 106


Light Green—No. 110


Battleship Gray—No. 104


Dark Gray (Natural)—No. 107


Dark Green—No. 112


Aluminum-Graphite (Dark)
No. 109

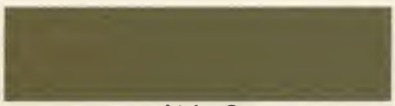

Aluminum-Graphite (Light)
No. 111

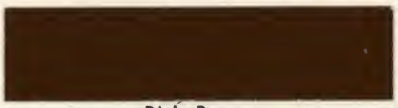

Bright Aluminum
No. 113

DIXON'S MAINTENANCE FLOOR PAINTS


Dustproof


Mahogany Red


Light Gray


Rich Brown


Oak


Dark Gray


Special Tan


Standard Green

DIXSPAR VARNISH



DIXON'S MAINTENANCE FLOOR PAINTS

All-purpose Floor Coatings

Dixon's Maintenance Floor Paints are all-purpose coatings for use on floors of

Concrete	*Linoleum*
Composition	*Wood*

They are designed to give the maximum of durability, the special vehicle used being properly balanced to give this result.

These paints are solid covering and heavy bodied so that a satisfactory finished job can be had in a two-coat operation.

For use in factories, garages, hotels, public buildings, steamships, hospitals, laboratories, railway cars and every place where a protective durable floor coating is required.



Prevent "Dusting" of Cement Floors

Dixon's Maintenance Floor Paints withstand the disintegrating action of the alkali in cement and concrete and effectually prevent "dusting."

They are not affected by hot, cold, fresh, salt or soapy waters, oil, alkali or dirt, and give service over a long period despite severe weather and extraordinary wear.

They dry in six to eight hours, thereby facilitating work which heretofore has been subject to irritating delays.

Colors

Dixon's Maintenance Floor Paints are made in eight conventional colors:

Mahogany Red	Dustproof	Rich Brown	Special Tan
Light Gray	Dark Red	Standard Green	Oak

For Inside or Outside Use

Dixon's Maintenance Floor Paints may be used inside or out and are particularly adapted to withstand the rigorous action of climatic changes, sleet, rain and salt water to a remarkable degree.

Because of their "all-purpose" characteristics Dixon's Maintenance Floor Paints have met the rigid standards of the marine trade which may be taken as an indication of their superior quality.

They have also found unqualified acceptance in the industrial and railroad fields where service conditions are, as a rule, particularly severe.

Specifications

[All cement floors, steps, platforms and wall bases] [All composition floors, steps, platforms and wall bases] [All wood floors] shall receive two coats of Dixon's Maintenance Floor Paint, color selected.

All surfaces to be painted shall be thoroughly cleaned before the paint is applied.

To insure satisfactory performance, Dixon's Maintenance Floor Paint shall not be applied to cement surfaces until at least three months after installation.

DIXSPAR VARNISHES

Exterior Varnish—Floor Varnish—Aluminum Vehicle

Dixspar Exterior Varnish

A quality varnish unsurpassed for durability and waterproofness.

Dixspar Exterior is extremely elastic and its use is especially recommended on outdoor surfaces that are subjected to rigorous climatic conditions or wear.

It will provide a tough protective film on boats, table tops, floors (where rapid drying is not essential), exposed signs, porch ceilings (wood), sporting equipment, etc.

Directions for Use—Dixspar Exterior flows out smoothly and freely requiring very little brushing, permitting the application of a heavy coat. It is sufficient to draw the brush over the surface two or three times in opposite directions; the final stroke being lengthwise with the panel or grain of the wood.

When used outdoors, Dixspar Exterior should not be applied over shellac. If the surface requires "filling" a good oil or varnish filler should be used, followed by two coats of Dixspar Exterior.

New Woodwork—Apply filler of desired color and follow with two full coats of Dixspar, allowing 12 to 15 hours between coats for thorough drying.

Close Grained Woods (New)—Fill with oil or varnish filler and follow with two full coats of Dixspar Exterior allowing 18 to 20 hours between coats for drying.

For Stain Work—Apply stain to the natural wood and after it is thoroughly dry, smooth down with fine steel wool and apply two coats of Dixspar Exterior.

For Velvet or Eggshell Finish—On all such work as described above on which a velvet or eggshell finish is desired, allow the final coat of Dixspar Exterior 48 hours for drying, and rub down with pumice stone and water. If a polish is desired, use rottenstone and oil, but wait until several days have elapsed before this final operation—this permits the film of Dixspar to dry stone hard.

Dixspar Floor Varnish

Dixspar Floor in addition to being rapid drying, has excellent waterproof qualities and provides adequate protection even where the surface undergoes hard usage. It withstands heavy foot traffic and it is this characteristic that recommends Dixspar Floor for use on trim, furniture, linoleum, doors and natural wood surfaces throughout the building.

Directions for Use—Dixspar Floor should not be applied before the surface has been properly cleaned and all dust, dirt or foreign substances removed. A good clean brush with these precautions taken will insure satisfactory results.

New Floors—After filling with an oil or varnish filler of the desired color, apply two coats of Dixspar Floor allowing 4 to 6 hours for thorough drying between coats.

Old Floors—If in fair condition, the application of one coat of Dixspar Floor will renew the original finish and give desired results. If the surface is badly worn, the fragments of the old finish should be removed with a steel scraper and a filler used, followed by two coats of Dixspar Floor.

Dixspar Floor requires no thinning.

Dixspar Aluminum Vehicle

Dixspar Aluminum Vehicle is sufficiently heavy in body to carry up 2½ pounds of aluminum powder per gallon and hold it in suspension. For best results, however, an admixture of 1¾ to 2 pounds of powder per gallon is recommended. An aluminum paint made with Dixspar Vehicle may be used on metal or wood surfaces and will give the most durable of results on exteriors of gas holders, oil and gasoline tanks, transformers, fire escapes, in plant maintenance and similar usages.

The high quality of Dixspar Vehicle can be determined by the fact that it passes the standards of the Navy Department, the War Department (Panama Zone), the Aluminum Company of America, conforms to Specification 14B of the Federal Specification Board, and others of the highest specification agencies.

E. I. DU PONT DE NEMOURS & CO., INC.

Paints, Enamels, Varnishes, Duco

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WILMINGTON, DEL.

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Products

- Du Pont Duco (Brush and Spray)
- Du Pont Prepared Paint (for all Exterior Surfaces)
- Du Pont Architectural Varnishes
- Du Pont Dulux Architectural Enamels
- Du Pont Dulux Finishes
- Du Pont FlowKote Enamel
- Du Pont Fume Resisting Enamels
- Du Pont Flat Wall Paint
- Du Pont Primer-Sealer
- Du Pont White Enamel Undercoat
- Du Pont DuKrome Metal Primer
- Du Pont Antoxide (Rust Inhibitive)
- Du Pont Du-Lite (Mill White)
- Du Pont Floor and Deck Enamel
- Du Pont Wheeler's Paste Wood Filler
- Du Pont Penetrating Stain
- Du Pont Acid Stain
- Du Pont Stain Sealer
- Du Pont Wonderlac
- Du Pont Prepared Wax
- Du Pont Trim and Trellis Green

DU PONT
REG. U.S. PAT. OFF.

The du Pont Line

The quality reputation enjoyed by the du Pont line of finishes has been built on two primary factors: the establishment of rigid standards of quality, and the setting up of machinery and methods to insure strict adherence to these standards. These two principles have established in the public mind a confidence in du Pont products, and assure the architect of the best possible results.

With its unique technical and scientific experience, the du Pont Company combines a practical paint manufacturing experience which dates back over a century. The old Harrison paint line, the Yellow Can Varnishes of the Chicago Varnish Works, and the Stains, Fillers and Finishes formerly manufactured by the Bridgeport Wood Finishing Company are worthy antecedents of the present du Pont line.

Du Pont Wheeler's Paste Wood Filler

The original silex wood filler, used by the leading piano and furniture manufacturers for over 40 years. Forms a permanent, unshrinkable, transparent foundation in the pores of the wood for the support of the finishing coats. It is specified by leading architects for all types of building construction, including the finest public and residential projects.

Supplied in Transparent, Walnut or Light Antique, and Mahogany.

(1) Specifications — Filler to be reduced with turpentine or benzine at the rate of 8 to 10 lb. of filler to 1 gal. of reducer. Apply 1 brush coat of Du Pont Wheeler's ( ) Paste Wood Filler. Allow work to stand until the filler has set or become dull, then rub the filler well into the pores of the wood, wiping off the surplus with a cloth or sea moss, rubbing across the grain. Allow to dry at least 24 hours before finishing coats are applied.

Du Pont Architectural Varnishes

These varnishes, sold under the Chicago "Yellow Can" label, have been specified by architects for the past 50 years, and are accorded first place in the varnish field.

Shipoleum Interior Finish—The very highest grade of interior varnish. Should be specified for use on fine residences, churches, schools, hospitals, asylums, public buildings, etc. It stands heat and moisture, is very elastic and durable. May be rubbed and polished.

Supremis Floor Finish—The first varnish made especially for floors, and one that has always retained its leadership. It is a remarkable wood preservative, dries hard and elastic, is extremely pale in color, and is thoroughly waterproofed. It is unusually resistant to heel marks and the tread of feet.



When rubbed, it produces the soft eggshell luster of French polish.

Navalite (Spar)—Especially adapted for use on front doors, vestibules and any exterior surface subject to all kinds of weather conditions. It will retain its luster and elasticity under severe conditions and meets every requirement of drying, appearance and durability.

Chi-Vo—One of the first and best known varnishes on the market. Noted for its beautiful rubbed appearance without the labor and expense of rubbing. This is a distinctive varnish, made by a new process, and has a third more spreading capacity than ordinary varnishes.

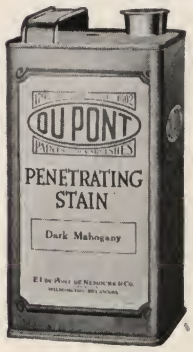
Should be specified as a finishing coat on interior woodwork over Shipoleum Varnish.

76 Dull Finish—A near approach to a hand rubbed finish. An outstanding varnish made for use on floors as well as interior trim. Dries quickly to a hard, impervious, waterproof film.

When used on floors, we recommend it be applied over du Pont Supremis Floor Finish or du Pont Quick Drying Floor Varnish. For interior trim it may be used over shellac or any du Pont clear varnish.

(2) Specifications—Apply 3 coats of Du Pont Architectural ( ) Varnish. Each coat to be sanded when thoroughly dry, with No. 00 sandpaper. Final coat may be left in natural gloss, or rubbed, if desired, or finished with Chi-Vo or 76 Dull Finish.

Du Pont Penetrating Stain



For producing on practically all woods, with the possible exceptions of mahogany and walnut, clear toned stained effects.

These stains do not raise the grain of the wood or show laps. They penetrate the wood deeply, bringing out the full beauty of the grain.

Where economy of finish is a factor, the oak shades may be used as a 1-coat finish, but are generally finished over with stain sealer and wax; stain sealer and varnish; filler, stain sealer and wax; or filler and varnish. On close grained woods, the use of filler is not necessary.

The mahogany shades are generally used on such close grained woods as birch, gumwood, pine, fir, cypress and whitewood, and should be finished over with stain sealer and varnish coats.

Regularly supplied in the following colors:

Light Oak, Brown Oak, Golden Oak, English Oak, Flemish Oak, Walnut, Light Mahogany, Dark Mahogany, Brown Mahogany, Mission Green, and Circassian Walnut (for gumwood only).

(3) Specifications—Apply brush coat of Du Pont ( ) Penetrating Stain. Allow work to stand for 3 or 4 minutes and wipe off surplus stain with a cloth to secure uniform effect. Allow to dry 24 hours before applying further finishing coats.

Du Pont Stain Sealer

A sealing coat for Penetrating Stains which also perfectly supports the varnish coats.

This product is much superior to shellac for the purpose, as it prevents the stain from "bleeding" through the varnish coats. Do not specify for exterior exposure.

(4) Specifications—Apply 1 brush coat of Stain Sealer over Penetrating Stain after it has dried thoroughly; allow to dry 24 hours and sand lightly. Dust work before applying varnish coats.

Du Pont Acid Stain

Intended for use on all types of wood in producing the delicate light gray and brown satiny effects not possible with any other type of stain.

The mahogany effects are generally used on genuine mahogany wood in connection with Wheeler's Paste Wood Filler, such surfaces being finished with varnish coats. Use filler on all open grain woods. Grays and fumes are generally finished over with Wonderlac.

Regularly supplied in the following colors:

No. 1000 Dark Fumed Oak, No. 1314 Light Fumed Oak, Standard Gray, Satin Gray, Steel Gray, Smoked Pearl, Mahogany, Dark Mahogany, Brown Mahogany. Write for panels showing new gray and brown tones.

(5) Specifications—Apply 1 brush coat of Du Pont ( ) Acid Stain. Allow work to dry thoroughly, about 12 to 24 hours, and sand surface smooth with No. 00 sandpaper. Dust work before applying further finishing coats.

Note: If time or expense will not permit rubbing, the use of Chi-Vo is recommended.

Wonderlac

A dull lusterless finish adapted for use *only* over the Gray and Fumed Oak Acid Stains. Does not change the color of the most delicate shades and forms a dampproof finish.

(6) Specifications—Apply 2 brush coats of Wonderlac over Standard Gray (or Fumed Oak) Acid Stain, allowing 8 hours between coats for drying.

Du Pont Prepared Wax

Used in producing the waxed effect on interior woodwork and floors.

(7) Specifications—Apply 2 coats of Prepared Wax. Apply with cloth evenly over entire surface; allow to stand 10 to 20 minutes and polish with a soft cloth. Second coat may be applied in the same manner 24 hours after first coat has been polished.

Du Pont Enamel Undercoat (White)

This is the proper undercoat for an enamel finish. Possesses excellent spreading qualities presenting full body on the work. Forms a hard, smooth foundation coat, causing the enamel to stand out with full gloss and luster.

(8) Specifications—Apply 2 brush coats of Du Pont Enamel Undercoat reducing, if necessary, with turpentine. to meet the conditions of the surface being painted.

Dulux Architectural Enamels

Architects, constantly on the alert for improved, more modern finishes, will find outstanding, improved products in the new Du Pont Dulux Architectural Enamel line—Dulux Architectural Gloss White, Eggshell and Undercoating. Each of these materials has set new standards of value in enamel finishing. Characteristics heretofore desirable but quite unattainable are to be found in the Dulux Architectural line.

The Gloss possesses an extremely white initial color, with great freedom from after-yellowing; flows free from brush marks; dries out of dust quickly, but sets slowly, drying overnight without surface tack to a hard film that resists absorption of dirt or grease.

Dulux Eggshell possesses all the general characteristics of the high gloss product such as ease of working, exceptional whiteness, smooth, hard finish, slow initial set, etc., and duplicates the appearance of a hand rubbed finish.

Dulux Undercoating is manufactured along the same general lines as the Gloss and Eggshell and is recommended for use under any enamel finish whether Dulux or otherwise. It is characterized by an extremely smooth, intense hiding film which holds out subsequent enamel coats and presents a finish free from brush marks. It is quick-drying.

(9) Specifications—

First Coat—Dulux Architectural Enamel Undercoating.

Second Coat—Dulux Architectural Enamel Undercoating.

Third Coat—Dulux Architectural Gloss White.

Fourth Coat—Either Dulux Architectural Gloss or Eggshell Finish.

Note: When applying Dulux Architectural Finish over new plaster or metal surfaces, substitute DuPont Primer Sealer or Dulux Kromate Metal Primer, respectively, for the first coat of Dulux Undercoating mentioned above.

FlowKote Enamel



A high grade strictly long oil, zinc pigment enamel of unusual durability. Adapted for both interior and exterior work. Supplied in White and Ivory, in both gloss and rubbed finish. The latter type gives the hand rubbed effect without the labor and expense of rubbing.

(10) Specifications—In addition to the Enamel Undercoat mentioned above (Specification 8) two additional coats should be applied as follows:

First Enamel Coat—FlowKote Gloss Enamel.

Second Enamel Coat—FlowKote—either Gloss or Eggshell Finish.

Note: This would make an exceptionally high grade FlowKote finish in four coats, counting the two coats of Undercoat. Sand all coats with the exception of the finish coat. Final coat may be in gloss or rubbed effect, white or ivory, as desired. The material may be tinted to any shade with Du Pont Harrison Brand Oil Colors.

Fume Resisting Finishes

Fume Resisting Eggshell White Enamel and Fume Resisting Undercoater are formulated for interior use where chemical or industrial fumes tend to yellow ordinary oil type white enamels. The atmospheric conditions in laundries, bakeries, rubber factories, and chemical laboratories and plants are usually severe on white enamels and under these conditions our fume resisting enamels have shown excellent retention of whiteness.

Finishing procedure and results to be obtained will depend on type of construction and the nature and condition of the surface of previously applied paint. Directions to fit the circumstances will be supplied on request.

Du Pont Prepared Paint



A lead, zinc, and linseed oil paint of exceptional durability. Excellent spreading and hiding properties.

Color card on request, showing 28 attractive colors.

(11) Specifications—Coat all knots and sappy streaks with Du Pont Prepared Paint Aluminum prior to the application of the first coat. All nail holes to be puttied after the first coat has dried.

Apply three coats of Du Pont Prepared Paint ( ) as follows:

Close Grained Non-absorbent Woods (Yellow Pine, Cypress, Fir, Hemlock)—

Priming Coat—Reduce to priming consistency with two parts of raw linseed oil and one part of turpentine in the proportion of 1½ to 2 pints to the gallon of paint.

Second Coat—Reduce with 1 part of raw linseed oil and 2 parts of turpentine in the proportion of 1 pint to the gallon of paint.

Third Coat—Apply as received in the package.

Close Grained Medium Absorbent Woods (White Pine)—

Priming Coat—Reduce to priming consistency with two parts of raw linseed oil and one part of turpentine in the proportion of 1 to 1½ pints to the gallon.

Second Coat—Reduce with 2 parts of raw linseed oil and one part of turpentine in the proportion of 1 pint to the gallon of paint.

Third Coat—Apply as received in the package.

Open Grained Woods (Good Absorbers)—

Priming Coat—Reduce to priming consistency with 2 parts of linseed oil and 1 part of turpentine in the proportion of 1 pint per gallon.

Second Coat—Reduce with equal parts of linseed oil and turpentine in the proportion of 1 pint to the gallon of paint.

Third Coat—Apply as received in the package.

Du Pont Primer-Sealer

Primer-Sealer is recommended for use in priming interior plaster, wallboard, and concrete surfaces. Prevents suction and retards lime burns. Primes and seals in one operation. It is purposely made in heavy consistency to permit reduction by the painter.

Du Pont Flat Wall Paint



A ready-to-use interior wall finish, producing a soft, velvety surface that can be repeatedly washed. Has unusual spreading and hiding properties and exceptional flow on the work.

Supplied in 13 colors and white. Send for color card, showing these colors in various combinations.

(12) Specifications—*First Coat*—Du Pont Primer Sealer, reduced with one quart of turpentine to the gallon.

Second Coat—Du Pont Flat Wall Paint of package consistency.

Third Coat—Same as second coat.

Du-Lite (Mill White) Enamel



Du-Lite is a mill white of lasting whiteness. It retains its whiteness even under unusual conditions—due to the special process by which the oil that is used as the vehicle is prepared. It has no superior for spreading capacity, ease of application, and hiding power.

Du-Lite is made in the following finishes: Du-Lite Undercoater, Du-Lite Gloss, Du-Lite Eggshell and Du-Lite Flat. Three coats recommended for all new or unpainted work.

(13) Specifications for Use Over Interior Cement, Concrete, Brick and Plaster—All surfaces must be thoroughly dry and free from grease and dirt.

(*Caution:* New or green surfaces, particularly green or strong in alkalis, should first be washed with a solution made by dissolving 3 to 4 lb. of zinc sulphate in 1 gal. of water. Brush off crystals when dry.)

First Coat—Du Pont Primer-Sealer reduced with one quart of turpentine or turpentine substitute to the gallon.

Second Coat—Du Pont Du-Lite Undercoater to each gallon of which has been added ½ gal. of Du-Lite Enamel.

Third Coat—Du Pont Du-Lite Gloss, Eggshell or Flat.

Where only 2 coats are used, the following specification is recommended:

(14) *First Coat*—Du Pont Du-Lite Undercoater.

Note: Where brick and concrete surfaces are very porous, Primer Sealer should be added to the Undercoater for a first coat, using approximately equal amounts of the Primer Sealer and the Undercoater.

Second Coat—Du Pont Du-Lite Gloss, Eggshell or Flat.

(15) Specifications for Use Over Interior Wood and Wall Board—All surfaces must be thoroughly dry and free from grease and dirt. Knots and sappy places in wood shall be shellacked before painting and all nailholes puttied after first coat.

First Coat—Du Pont Du-Lite Undercoater reduced to priming consistency with equal parts of pure raw linseed oil and spirits of turpentine or turpentine substitute.

Second Coat—Du Pont Du-Lite Undercoater.

Third Coat—Du Pont Du-Lite Gloss, Eggshell or Flat.

Note: Where only 2 coats are used, the second coat may be omitted.

(16) Specifications for Use Over Interior Structural Iron or Steel and All Metal Work (except Galvanized Iron)—Metal surfaces shall be cleaned of all scale, dirt, rust and grease.

First Coat—Du Pont Du Krome Metal Primer.

Second Coat—Du Pont Du-Lite Undercoater.

Third Coat—Du Pont Du-Lite Gloss, Eggshell or Flat.

Note: When galvanized iron is to be finished, apply a solution of copper sulphate, using 8 oz. in 1 gal. of warm water. Allow to dry. Then rinse with clear water and wipe dry with rags. Apply prime coat as above.

Antoxide (Rust Inhibitive)



A metal paint with outstanding rust-inhibitive properties. This paint withstands acid fumes to an unusual degree, therefore is peculiarly adapted for use around smelters, acid plants, paper and other mills. Furnished in five colors: Gray, Red, Bronze Green, Maroon, and in Black.

(17) Specifications — Surface to be free from grease, dirt and dust. Wire brush to remove scale.

First Coat—Du Pont Du Krome Metal Primer.

Second Coat—Du Pont Antoxide ( ), to each gallon of which has been added ½ pt. of turpentine.

Third Coat—Du Pont Antoxide ( ), as contained in package.

Du Krome Metal Primer

A flat-drying first coat for all metal surfaces, combining the advantages of Basic Chromate Lead, Red Oxide of Iron, and Zinc Oxide in its pigment portion. Its color, therefore, is of the red oxide type. Possesses unusual rust-inhibiting qualities and creates a perfect bond for finishing coats. Dries sufficiently hard overnight under normal conditions for subsequent coats.



Du Pont Floor and Deck Enamel

Hard drying, wear resisting high gloss enamel paint for preserving interior and exterior wood and concrete floors. Supplied in 11 colors.

(18) Specifications (Wood Floors)—*First Coat*—Du Pont Floor and Deck Enamel Paint ( ) to each gallon of which has been added 1 pt. pure turpentine.

Second Coat—Du Pont Floor and Deck Enamel Paint ( ) as received in original package. (See Note 1 below.)

(19) Specifications (Concrete Floors)—*First Coat*—Du Pont Floor and Deck Enamel Paint ( ) to each gallon of which has been added from ½ to 1 pt. pure turpentine.

Second Coat—Du Pont Floor and Deck Enamel Paint ( ) as received in original package. (See Note 1 below.)

Note No. 1: If Floor and Deck Enamel is to be used on exterior surfaces, one pint of pure linseed oil should be added to each gallon of enamel on the final coat.

(*Caution:* Concrete floors should age for at least 60 days before painting. Refer to Du-Lite Specification 13 for new concrete wall and ceiling surfaces).

Du Pont Trim and Trellis Green



Trim and Trellis Green is a revolutionary trim green, made possible through du Pont's latest chemical achievement—Dulux Vehicle. Extra durability, quick drying, and resistance to fading are only a few of its advantages over orthodox green paints. This sensational new product is setting new standards of durability and has solved many of the heretofore commonly regarded inherent weaknesses of exterior greens.

It retains its good appearance 50% longer than ordinary greens. It is extremely resistant to mildew and fungus growths. It is quick drying—and consequently free from the hazards of dirt and dust collection. It brushes out freely, with a beautiful gloss and a smooth, even finish that is particularly free from brush marks.

Trim and Trellis Green enjoys an enviable reputation with painters and architects due to its outstanding characteristics. Supplied in four attractive shades—Jade Green, Light Green, Dark Green, Bronze Green, and Emerald Green.

(20) Specifications—Apply 2 or 3 coats of Trim and Trellis Green. Reduce first coat with 1 pint to 1 quart of Dulux No. 186 Reducing Oil according to porosity of surface. Allow 16 hours between coats.

Special Note

Realizing that the architects of today are constantly striving for uniqueness, economy and beauty, but not at the expense of quality or serviceability, the du Pont Company, research leader in the chemical field, is vitally interested in encouraging, assisting and promoting the architects' handiwork.

The Architectural Division of the du Pont Company is maintained for the express purpose of co-operating with the architectural profession. Every attempt is made to study the problems pertaining to the profession, and the use of the service of one of the du Pont architectural representatives or direct contact with any of the offices is cordially invited.

In addition to this, a selected list of finished panels, the result of exhaustive research with the architects, is kept on hand at all times awaiting your requests. Every panel carries a complete outline of the finishing procedure.

THE EAGLE-PICHER LEAD COMPANY

Manufacturers of Lead Pigments for Paints

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EAST ST. LOUIS, ILL., 305 St. Clair Avenue

For Eagle Home Insulation, see Manufacturers' Index

Eagle White Lead—For All Types of Painting



Pure lead paint (made from white lead carbonate ground in linseed oil) continues to be the most satisfactory answer to all general painting problems. In the hands of a good painter, it is quickly mixed to suit *exactly* all the requirements of each job. It readily fits into any decorative plan, for the painter tints it to the desired shade on the job.

Pure lead paint expands and contracts with changes in temperature; the film is elastic and long wearing despite severe weather conditions. It wears away slowly, so that when repainting is necessary, the old film forms a perfect base for the new white lead coats without burning or scraping off.

Eagle White Lead comes in two forms: heavy paste and easily-mixed *soft paste*. Both are pure lead carbonate ground in linseed oil, but *soft paste* contains more oil. This additional oil, ground in at Eagle factories, saves the painter time in preparing the mixture for the brush. Both heavy and *soft paste* Eagle White Lead are available in 100, 50, 25 and 12½-lb. air-tight steel kegs.

For Interior Decoration—*(a) Flat Effects and "Egg-Shell" Gloss Finishes*—When pure white lead is thinned to brushing consistency with Eagle Flatting Oil, the resulting paint provides a durable finish which may be tinted to any color required by the decorative plan. The paint dries into a smooth washable surface showing no brush marks.

Before application, the wall surface should be thoroughly dry; if, for example, paint is applied on plaster walls which are still damp, cracking will develop. No amount of quality materials and skillful workmanship can avert it. Loose paint scales, if present, must be scraped and sandpapered off; oil or grease spots must be removed, for paint will not adhere to these surfaces. All dust must be wiped off; otherwise it is liable to mix with the paint and discolor it.

General Formulæ (heavy paste only is considered):

New Inside Work

Priming Coat

Eagle White Lead	100	lbs.
Pure Raw Linseed Oil	3	gals.
Pure Turpentine	1	gal.
Best Japan Drier	1½	pts.
Paint produced	7	gals.

Second Coat

Eagle White Lead	100	lbs.
Pure Raw Linseed Oil	1½	gals.
Pure Turpentine or Eagle Flatting Oil	1½	gals.
Best Japan Drier	1	pt.
Paint produced	5⅞	gals.

Third Coat—Oil Gloss

Eagle White Lead	100	lbs.
Pure Raw Linseed Oil	3-3½	gals.
Pure Turpentine or Eagle Flatting Oil	1	pt.
Best Japan Drier	1	pt.
Paint produced	6-6½	gals.

Third Coat—Flat

Eagle White Lead	100	lbs.
Turpentine or Eagle Flatting Oil	3 -3½	gals.
Paint produced	5¾-6¼	gals.

Old Inside Work

First Coat

Eagle White Lead	100	lbs.
Pure Raw Linseed Oil	1	gal.
Pure Turpentine or Eagle Flatting Oil	2-3	gals.
Best Japan Drier	1	pt.
Paint produced	5¾-6¼	gals.

Second Coat—Oil Gloss

Eagle White Lead	100	lbs.
Pure Raw Linseed Oil	3-3½	gals.
Pure Turpentine or Eagle Flatting Oil	1	pt.
Best Japan Drier	1	pt.
Paint produced	6-6½	gals.

Second Coat—Flat

Eagle White Lead	100	lbs.
Turpentine or Eagle Flatting Oil	3 -3½	gals.
Paint produced	5¾-6¼	gals.

Note: Eagle Flatting Oil, as recommended in the foregoing specifications, is obtainable in quart, gallon, and 5-gallon packages. A companion product to Eagle White Lead, Eagle Flatting Oil is indispensable in effecting the rich, tasteful wall finishes made from pure white lead paint.

In the foregoing formulæ, no consideration has been made for color other than that of the natural gleaming whiteness of pure lead paint. Any oil colors of known quality effectively combine with Eagle White Lead; a tinting chart will be sent on request.

(b) Plastic Finishes from White Lead Paint—Dignified, low-relief textures can be secured with Eagle White Lead. Tones and shades are limitless, depending on the motif of the individual decorative scheme. Any skilled craftsman can quickly execute these tasteful plastic finishes; a detailed booklet on this subject will be sent without charge to any architect desiring it.

For Exterior Decoration—Pure lead paint has long enjoyed unequalled prestige for durability and beauty in outside painting work. The surface, prior to painting, must be prepared in general as suggested under "Interior Decoration." General Formulæ (*soft paste* only is considered):

Old Outside Work

First Coat

Eagle Soft Paste White Lead	100	lbs.
Raw Linseed Oil	3	qts.
Turpentine	1¾	gals.
Best Japan Drier	1	pt.
Paint produced	6	gals.

Second Coat

Eagle Soft Paste White Lead	100	lbs.
Raw Linseed Oil	2½	gals.
Turpentine	1	pt.
Best Japan Drier	1	pt.
Paint produced	6¼	gals.

New Outside Work

Priming Coat

Eagle Soft Paste White Lead	100	lbs.
Raw Linseed Oil	2¾	gals.
Turpentine	1½	gals.
Best Japan Drier	1	pt.
Paint produced	7⅞	gals.

For very light-colored woods ½ gal. more of oil may be added.

Second Coat

Eagle Soft Paste White Lead	100	lbs.
Raw Linseed Oil	1	qt.
Turpentine	1½	gals.
Best Japan Drier	1	pt.
Paint produced	5⅜	gals.

For very light-colored woods ¼ gal. more of oil may be added.

Third Coat

Eagle Soft Paste White Lead	100	lbs.
Raw Linseed Oil	2½	gals.
Turpentine	1	pt.
Best Japan Drier	1	pt.
Paint produced	6¼	gals.

For very light-colored woods 1 pt. more of oil may be added.

Eagle Sublimed Blue Lead—for Metal Surfaces

Ten reasons for rustproofing with sublimed blue lead:

(1) Proper basicity, chemically stops corrosion.
(2) Exceptional durability; does not crack, check or peel.
(3) Elasticity and toughness in oil.
(4) Extreme fineness and smoothness.
(5) Easy brushing, spraying, and dipping qualities, air dried or baked.
(6) Remarkable opacity.
(7) Pleasing color—being slate gray and easily tinted.
(8) Exceptionally low cost per square foot.
(9) Will not harden in the keg.
(10) Can be used with treated oils and varnishes of neutral character.

Sublimed blue lead is a fine, slate-gray powder, produced by sublimating galena ore (lead sulphide) in special furnaces. The pigment is accurately mixed with linseed oil in proper proportions and ground. No other raw materials are used. Sublimed Blue Lead is not only highly efficient for rustproofing, but is also extremely economical, both in original cost and long service.

A gallon of Sublimed Blue Lead will cover six hundred to eight hundred square feet of metal surface of average smoothness, and its use will assure protection for an unusually long period. Its easy spreading qualities cause it to require a minimum of labor in application.

Where to Use Sublimed Blue Lead

Sublimed Blue Lead is an ideal pigment for every purpose requiring a metal protective paint. Its first use is as a priming coat (direct to the metals). Sublimed Blue Lead is equally good for second and finishing coat work for metal or wood. To easily identify the different coats when Sublimed Blue Lead is used as a priming coat, it may be painted over with Eagle White Lead in Oil or Eagle Sublimed White Lead or mixed with either of them or with other combinations; such as, red lead, American vermillion, commercial chrome green or commercial chrome yellow. It can be brushed, sprayed, dipped, air dried, or baked.

Estimating Paint Requirements on Structural Steel

The scale below represents a method employed by an important steel fabricator for rapidly estimating the approximate paint requirements of large projects. Based upon the use of Sublimed Blue Lead, which as a priming coat, covers from six hundred to eight hundred square feet per gallon, this chart expresses the gallons of paint required per ton of steel in various types and shapes:

Average Highway Bridges	0.4 gals. per ton
Highway Beam Spans and Lattice Railing	0.8 gals. per ton
Light Mill Machinery	0.4 gals. per ton
Heavy Mill Machinery	0.32 gals. per ton
Plate Girders, Railway or Highway	0.24 gals. per ton
Heavy Highway and Railway Truss Spans	0.32 gals. per ton
Office Buildings	0.2 gals. per ton
Railing Beam Bridges	0.2 gals. per ton

This paint, made from Sublimed Blue Lead, averages from 600 to 800 square feet per gallon as a priming coat. The table may be adapted readily to other paints by first learning how many square feet the particular paint covers per gallon and then by making adjustments in the same proportion as that coverage compares with that of Sublimed Blue Lead.

How to Use Sublimed Blue Lead—The removal of rust, mill scale and dirt should be done generally by sand blasting or through the use of metal brushes, scrapers, chisels, hammers or other effective means. Bright steel should be exposed in all cases. If sand blasting is used, the first coat of paint must follow immediately.

Oil and grease may be removed by the use of gasoline or benzine. Do not apply paint on wet or damp surfaces and in no case until preceding coat is dry and hard. Allow two to four days before applying second coat for exterior work. For priming coat on interior allow one week before applying a second coat, and twenty-four hours between second and third coats.

Paint shall be evenly spread and shall be thoroughly brushed out. Where solder fluids have been used on metal surfaces, it shall be cleaned thoroughly with benzine before any paint is applied. All rivet heads and bolts, and all edges and corners shall be thoroughly covered with paint in painting structural steel or other metal work.

In exceptional instances pickling is advisable for small work and especially before painting galvanized metal, otherwise treat it with a solution of eight ounces copper sulphate to one gallon of soft water, allow to dry and brush off, follow by using Sublimed Blue Lead. Paint shall be thoroughly stirred before being removed from container and while it is being applied.

How to Secure Sublimed Blue Lead—Sublimed Blue Lead in Oil sells at the same low price as Eagle White Lead in Oil and may be had in the following sizes: 12½, 25, 50 and 100-lb. containers, or may be secured from a reliable paint manufacturer by specifying pure Eagle-Picher Sublimed Blue Lead mixed to paint consistency ready to apply.

Paint Formulæ

Sublimed Blue Lead in Oil (paste)
First and Intermediate Coats

Sublimed Blue Lead in Oil	100 lbs.
Raw Linseed Oil	2⅜ gals.
Turpentine or paint and varnish manufacturers' 48° to 50° Naphtha	1¾ gals.
Drier (rosin free)	1 qt.
Approximate paint produced	7¼ gals.

Finishing Coat

Sublimed Blue Lead in Oil	100 lbs.
Raw Linseed Oil	3 gals.
Turpentine or 48° to 50° Naphtha	2 qts.
Drier (rosin free)	1 qt.
Approximate paint produced	6⅔ gals.

Sublimed Blue Lead—Dry (powder)
First and Intermediate Coats

Sublimed Blue Lead—Dry	90 lbs.
Raw Linseed Oil	3⅜ gals.
Turpentine or 48° to 50° Naphtha	1¾ gals.
Drier (rosin free)	1 qt.
Approximate paint produced	7¼ gals.

Finishing Coat

Sublimed Blue Lead—Dry	90 lbs.
Raw Linseed Oil	4¼ gals.
Turpentine or 48° to 50° Naphtha	2 qts.
Drier (rosin free)	1 qt.
Approximate paint produced	6⅔ gals.

48° to 50° Naphtha represents the gravity known as the Baume or hydrometer test for a liquid weight. When used as a substitute for turpentine, be sure the flash point complies with the fire underwriters or local ordinance.

To increase the permanence of the color, many users add about three percent lampblack or black magnetic oxide of iron to formulæs for second and finishing coats.

The Raw Linseed Oil shall conform to the linseed oil specifications of the A.S.T.M. Standards, Pages 655-658, Volume 21.

The Japan Drier shall be pure unadulterated drier containing no rosin.

The Turpentine used shall be pure unadulterated turpentine and conform to the specifications of the Department of Commerce, Bureau of Standards, as given in Circular No. 86.

Note: For painting metal surfaces that may become too hot to warrant the use of linseed oil, substitute winter pressed fish oil.

Eagle Red Lead—Dry and in Oil

While we recommend Sublimed Blue Lead as the most effective yet most economical rustproofing pigment on the market, we are also manufacturers of pure red lead. Eagle Red Lead in Oil is packed in 100, 50, 25, and 12½-lb. kegs. In dry form, it is put up in barrels of 500-600 lbs.

It possesses high "true" red lead content and is fine enough to insure splendid brushing qualities. It is impervious to water and unaffected by atmospheric gases. The rapid drying qualities of Eagle Red Lead make it decidedly advantageous for use where a hard surface, capable of withstanding abrasion, must be produced in a shorter time than usual.

ESTABLISHED 1897

A. C. HORN COMPANY

Technical Coatings for the Conservation of Buildings

WORKS, LABORATORIES AND EXECUTIVE OFFICES

Horn Building

LONG ISLAND CITY, N. Y.

BRANCHES IN ALL PRINCIPAL CITIES

For our catalogues on Floor Treatments, Waterproofings and Technical Paints; Terrazzo Floor Treatment and Horn T & G Strip, see Manufacturers' Index

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KONCREX

"More Than a Floor Paint"

Its penetrating binder dustproofs and wearproofs. A decorative surfacing for new or old cement floors. "Traffic-proof" in comparison with floor paints of doubtful life.

Standardized upon by those who used KONCREX twenty years ago and still use this proven coating. Produced in all colors and also transparent.

Don't paint cement floors—Koncrex.

SYMENTREX

"More Than an Exterior Masonry Paint"

Immune to disintegration by the high alkalinity of wall surfaces. Waterproofs as well as lastingly decorates. Without the limitations of linseed oil paints or cement washes. Cheaper by several years.

A complete range of colors. Perfect for waterproofing and beautifying every masonry surface, including stucco, concrete and brick. Scientifically compounded for this one purpose, SYMENTREX has been time-tested for a generation in every climate throughout the world.

HORNROCK

"Waterproof Powder Paint"

For decorating *wet* or *dry* masonry walls. All standard colors. Simply mix with water, wet down the walls and brush on. Binds to all types of masonry surfaces. Washable, immune to steam and dampness.

Ideal for basements, laundries, garages, etc. HORNROCK is the standard outdoor swimming pool treatment.

DEHYDRATINE NO. 2 AND NO. 2A

"The Invisible Coating"

Exterior transparent waterproof coatings for untreated masonry walls. Seals leaky, porous surfaces. Prevents unsightly white discoloring efflorescence.

Dehydratine No. 2—For darker brick, stucco or concrete walls. Slightly deepens color and brings out texture.

Dehydratine No. 2A—For waterproofing without changing color of limestone, sandstone or any light-colored masonry.

Further Information on Koncrex, Symentrex, Hornrock and Dehydratine No. 2 and No. 2A in this Edition of Sweet's

Further information on KONCREX, SYMENTREX, HORNROCK and DEHYDRATINE No. 2 and No. 2A will be found in our catalogue on *Floor Treatments, Waterproofings, Dampproofings* and *Technical Paints* in this edition of SWEET'S. For page number of this catalogue, see Manufacturers' Index.

Send for detailed specifications and color charts

ESTABLISHED 1834

E. & F. KING & CO., INC.

Manufacturers of Putty and Paints

FACTORY AND GENERAL OFFICE

TELEPHONE
Hancock 8930

399-409 Atlantic Avenue, BOSTON, MASS.

NEW YORK OFFICE, 200 Broadway—Telephone, COrtlandt 7-3579

HAMPDEN PAINT DIVISION, E. & F. KING & CO., INC., SPRINGFIELD, MASS.

Products

TRIPLE LEADKOTE PAINT; "BREER'S" METAL COATING; "BREER'S" WALL FINISH; HAMPDEN SUNRAY WHITE; "BREER'S" METAL SASH PUTTY; "KINGLAZE" QUALITY WOOD SASH PUTTY.

Also various Interior Wall Paints.

Triple Leadkote, a Primer for Structural Steel and All Metal Work

This paint is designed as a primer for every class of steel construction where absolute protection from corrosion is required. It is composed of all pure lead pigments, which give the maximum adhesion, cohesion, and inhibition when properly incorporated with our specially processed oil vehicle.

Breer's Metal Coatings for Structural Steel and All Metals

Designed and proven to give the best steel protection, they stand the highest test when used over Triple Leadkote. Especially used for painting of bridges, standpipes, steel sash, structural steel, etc.

Over fifteen years of thoroughly satisfactory service on specified work have established irrefutably the excellent quality and entire dependability of Breer's Metal Coatings. They withstand exposure to every climatic condition, are waterproof, insoluble in common acid and salt solutions, and also impermeable to stray electric currents.

Specifications for Painting Steel

All steel shall be thoroughly cleaned and scraped of all metal scale, rust, grease and any other foreign substance at the shop, and shall be given one full priming coat of Triple Leadkote before erection.

After erection, the complete structure shall have two full coats of Breer's Metal Coating of colors to be selected. All surfaces which cannot be second-coated after erection shall have a field coat of Breer's Metal Coating before erection.

Specifications for Structural Steel—(1) Encased in Concrete—The steel shall be thoroughly cleaned and scraped, removing all loose metal scale or grease and other foreign substances, and shall be painted one shop coat of Breer's Metal Coating No. 202 Dark Gray. Any places where the paint film is ruptured or torn, shall be touched up after erection with No. 202 Dark Gray.

(2) Steel Encased in Brick Terra Cotta and Limestone—Structural steel shall be thoroughly cleaned of all metal scale and grease and shall then receive one full coat of Breer's Metal Coating No. 202 Dark Gray, followed by two coats of Breer's Metal Coating, color to be selected by the architect after erection.

Breer's Wall Finish

A durable flat, eggshell or gloss wall paint in twenty attractive shades. Can be washed repeatedly without impairing the color or finish.

Goes on very smoothly and freely, leaving no streaks or brush marks, and since it is an oil paint the danger of cracking and chipping is eliminated. This paint can be stippled immediately after application. One gallon covers 500 to 700 sq. ft. of surface, one coat. Put up in barrels, 5 and 1-gal. cans.

Specifications for Wall Finish

New Walls—Apply one priming coat of Breer's Wall Primer, allow to dry and then apply one or more coats of Breer's Wall Finish, either flat, eggshell or gloss. This Primer is pigmented, so that it not only stops all wall porosity, but is equal in covering to one full coat of paint.

Old Walls—All dust and dirt of a greasy nature should be removed by washing with gasoline or a solution of ½ lb. oxalic acid in 1 gal. of water. Walls should then be cleaned with soap and water before the paint is applied. If painted walls are in good condition only one coat will be required, unless a light color is to be used over a dark color.

Hampden Sunray White—An Interior Coating

Adaptable to any interior surface material from brick to gypsum block, and to any and all types of construction. It is used extensively for offices, factories, public buildings, schools, hospitals, theaters, and wherever a durable, washable, light reflecting, brilliant, enduring surface is essential. Sunray White washes like a china dish and remains *white* an unusually long time. It will not chip, flake, or peel if applied according to our directions. For clarity, permanence, and longevity there is a record test of over 20 years behind this extraordinary Interior White.

Hampden Sunray White is furnished in undercoat and three finishes, flat, eggshell, or gloss.

Putty Should Be Specified

The failure of putty, due to cracking, wrinkling, sagging, and breaking away, can be avoided by specifying putty made to a definite formula by a special process and properly aged. The importance of putty specifications, from an architectural and engineering viewpoint, cannot be overstressed.

Breer's Metal Sash Putty

Proved by fifteen years of service and recognized by engineers as most durable. Manufactured for special use on steel factory and casement sash, marquises, etc. Our own special process of manufacture and aging produces a putty which works very freely under the knife, sets sufficiently on surface for painting within a week, and does not wrinkle, sag or form oil pockets. Will last indefinitely if properly painted.

"Kinglaze" Quality Wood Sash Putty

Widely known and used by large sash manufacturers and glaziers for bedding and setting glass in sash, doors, skylights, conservatories, etc. Guaranteed pure English chalk whiting and linseed oil, free from adulterants.

Manufactured and aged by our own special process and produces most satisfactory results.

JOHN LUCAS & COMPANY, INC.

Makers of Paint and Varnish Since 1849

PHILADELPHIA, PA.

ARCHITECTURAL DEPARTMENT
322 Race Street, Philadelphia, Pa.

BRANCH OFFICES

BOSTON, MASS. CHICAGO, ILL. NEW YORK, N. Y. PITTSBURGH, PA. WEST BERKELEY, CALIF.

Durawall

Washable Interior Finish

Durawall Interior Finish

Flat Finish—Eggshell Finish

Durawall is a water free paint product for interior walls and surfaces. It is a wall finish that neutralizes lime in plaster, seals all pores, stops suction and forms a film from which, 30 days after application, sulphur match scratches, ink spots, grease stains, crayon marks, as well as marks left by soiled or perspiring hands, may be washed off with ordinary soap and water. Durawall is not only washable—it may be scrubbed or even cleaned with abrasives, if necessary, without injury to the paint film.



Durawall comes in two parts—body and reducer. Durawall Body is too thick to be used alone; yet it must not be thinned by any liquid other than Durawall Reducer. Durawall is ready for use when mixed, body and reducer, on the job. No aging or sizing is required.

Durawall Body is made in 8 colors and white, to be used with Durawall Reducer for a finish of eggshell gloss. Durawall Body Flat White and Durawall Reducer produce a flat finish. Durawall is "flowed on, not brushed out."

Any stipple finish may be obtained with Durawall.

Specifications for Mixing Durawall

For Eggshell Finishes

For walls on which a smooth putty coat or smooth Keene's cement has been applied and are ready for paint application:

A. Foundation Coat—Two parts Durawall Reducer and one part Durawall Body.

B. Second Coat—Equal parts Durawall Reducer and Durawall Body.

For smooth putty coat walls which have been sized and painted previously:

A. Foundation Coat—Equal parts Durawall Reducer and Durawall Body.

B. Second Coat—Equal parts Durawall Reducer and Durawall Body.



Fac-simile of cans in which material is delivered at building in unopened containers

For walls of rough or smooth concrete, brick, cement, and sand finished or semirough finished plaster.

A. Foundation Coat—Two parts Durawall Reducer and one part Durawall Body.

B. Second Coat—Equal parts Durawall Reducer and Durawall Body.

For Composition Board, sized or unsized:

A. Foundation Coat—Two parts Durawall Reducer and one part Durawall Body.

B. Second Coat—Equal parts Durawall Reducer and Durawall Body.

For Flat Finishes

Use two parts Durawall Reducer and one part Durawall Body for first coat on new work; for finish coat use one part Durawall Reducer and two parts Durawall Body Flat White. Do not wash or scrub, flat film, until 60 days after application.

Specifications for Applying Durawall

Two coats of Durawall, in tints not too light, usually suffice on new plaster without sizing or priming coat.

As Durawall is a "water-free" paint product, its balance between pigment and vehicle content has been carefully worked out; therefore no liquids or pigments shall be added to Durawall other than Durawall Reducer. Turpentine, benzine, gloss oil, coal oil, linseed oil or water must not be mixed with Durawall.

All surfaces on which Durawall is to be applied must be in first class condition, thoroughly dry and solid before Durawall's foundation coat is applied. The foundation coat must seal the pores and stop all suction. Should spots of any nature develop after foundation coat has been applied, use only Durawall Reducer (clear) over these spots before second coat is applied. Allow 24 hours between coats on the eggshell finish and 8 hours on the flat. Durawall and Reducer, mixed, cover approximately 600 sq. ft. per gal. 2 coats.

OTHER LUCAS WATER-FREE PRODUCTS

Tinted Gloss Super Outside White

A pure linseed oil, ready-mixed, white exterior house paint of unsurpassed hiding qualities, which is suitable for two-coat work. Made on a titanium base, it has extraordinary body and exceptional enduring qualities.

Lu-Co-Flat

Ready-mixed flat oil paint, has great hiding power, "sets" slowly, dries overnight at a moderate working temperature, and has good body. It is easy spreading and does not sag or "curtain." This paint works well for flat brush, stippling, sponge or mottled effect. Made in 16 shades and white.

Floor-Life

"Made to walk on"—for use on all floors, inside or out, wood, composition, concrete, cement, tile or linoleum. Covers approximately 250 sq. ft. per gal. two coats. "Stands up" under heavy foot wear. Made in 10 colors and black and white.

Lucas Gibbsboro Brand Colors in Oil

These colors in oil, have been manufactured by Lucas since 1856. They are ground exceptionally fine. Their great tinting strength has made them a standard with practical painters. Trueness or purity of tone in reduction is an outstanding quality of Gibbsboro Brand Colors in Oil. Each color is a natural, untoned color, hence maximum permanence is produced when these colors are used.

Lucaseal Varnishes

Made to meet every requirement of the architect and painter. They include five individual types of varnishes, each made to serve a particular purpose; Lucaseal Interior, Lucaseal Exterior, Lucaseal Floor, Lucaseal Seat, and Lucaseal Dull.

For specifications, color cards, or literature on these and other Lucas Water-Free Products write to the Architectural Department

M. J. MERKIN PAINT CO., INC.

Paints, Enamels, Waterproofing and Asphalt Specialties

EXECUTIVE OFFICES
1441 Broadway, NEW YORK, N. Y.
FACTORY AND LABORATORIES, LYNDHURST, N. J.

Products

METAL PROTECTIVE COATINGS, INTERIOR FINISHES, EXTERIOR FINISHES, TEXTURED FINISHES, ENAMELS, VARNISHES, MILL WHITES, BRICK and CEMENT COATINGS, CAULKING and GLAZING COMPOUNDS, FLOOR COATINGS, DAMP-PROOF COATINGS, ROOF COATINGS and CEMENTS, EMULSIFIED ASPHALT, INTEGRAL WATERPROOFING, FLOOR HARDNERS, MARINE PAINTS.

PAINT MERCO PRODUCTS

TRADE-MARK

Facilities

The M. J. MERKIN PAINT CO.'s plant and laboratories at Lyndhurst, N. J., are fully equipped to manufacture products of the very highest quality under the direction of a competent chemical staff, from the finest materials obtainable. Years of experience have been expended in perfecting the formulae and improving the methods of manufacture with the result that all products are uniform in grade and quality.

Metal Protective Coatings

Merkin Metal Protective Coatings for both shop and field use have been prepared with the constant purpose in mind of providing the maximum of protection to structural steel and all other metal surfaces.

Plasticote Gloss Finish

A pure white gloss paint for general use on interior and exterior work. May readily be tinted to any desired color. It works easily under the brush and does not rope or show brush marks. On plaster it neutralizes hot lime spots, hardens soft spots, holds back moisture and forms a perfect foundation for the coats to follow.

Mercotone Flat Finish

A pure oil paint for general interior finish. Produces a soft, velvetlike finish that does not peel or check. It is made in two consistencies—Mercotone Triple Body for stippling and Mercotone Brush Coat for brushing and all other finishes. Made in twelve colors.

Mertex Textured Finish

A plastic paint for securing a wide variety of textured surfaces. It comes in a white powder form which when mixed with cold water produces a texturing plastic paint of heavy consistency and splendid workability. Mertex is permanent and washable and can be finished in any desired color combination.

Mercolite Enamel

A distinctly high quality, long oil enamel compounded of pure French process zinc oxide and treated refined linseed oil to give the maximum service. Made in white only, but can be tinted with colors ground in oil to any desired shade. It retains its brilliancy and whiteness for an unusually long time. Flows well under the brush, does not show brush marks and has unusually high covering capacity. Mercolite Enamel is made in two types—full gloss and eggshell. The latter gives a rubbed effect without the necessity of rubbing.

Britelite Mill White

An exceptionally fine light-diffusing paint that retains its whiteness for a long time. Made in two types—gloss and flat. The gloss finish is a soft, pleasing effect entirely dissimilar from the high gloss of enamel or ordinary gloss paints. The complete absence of glare from light reflection is noticeable where Britelite Mill White is used. It offers resistance to dirt accumulation and is easily washed.

Trimal, Metal Door and Trim Finish

Provides a beautiful, durable, elastic finish that protects the metal from corrosion. It is especially prepared for finishing metal doors and trim and other interior metal work, such as stairs and railings. It does not crack or craze, does not scratch readily and is easily cleaned.

Wearite Floor Enamel

A durable, quick drying floor enamel that stands up exceptionally well under heavy foot wear. Dries hard overnight. Is easily washed with water and is not affected by oils. For finishing floors, porches, decks, stairs, etc., of wood and cement. Made in eight attractive colors.

Merkin Brick and Cement Coating

A waterproof flat finish for use on exterior and interior masonry surfaces. It penetrates well into the pores of the surface and prevents staining of the surface by the action of free lime in the masonry. It provides an evenly colored, durable finish that does not crack or peel. Made in ten colors.

Merkin Lead and Zinc Paint

Made of lead, zinc and a minimum of inert pigment mixed in pure linseed oil with a small amount of dryer and turpentine. This paint stands up unusually well under the most adverse atmospheric conditions.

A feature of this paint is its great covering capacity which is half again that of the average good paint. Although it is not marketed on a price competitive basis this paint is distinctly economical to use. This is due mainly to its great covering capacity and its durability which, in the final analysis, are the proper gauges by which to judge the cost of a paint. Made in twenty-eight colors.

Merkin Aero Varnishes

These varnishes represent a combination of the finest obtainable raw materials and the utmost care and highest skill in manufacture. They have high resistance to water and do not turn white even in presence of excessive moisture. They provide a smooth, even film that is highly elastic and does not scratch readily.

Aquaseal Dampproofing

Merkin Aquaseal Asphalt Coatings are full bodied, elastic compounds that are designed to prevent the passage of moisture through masonry walls and provide a bonding surface for the application of gypsum (not portland cement) plaster. These coatings are regularly furnished in three consistencies—liquid, semimastic and mastic. Aquaseal Dampproof coatings are applied cold without further mixing or heating.

Emulsified Asphalt

Merkin R. P. Emulsified Asphalt is made in liquid and mastic form for application to masonry surfaces for dampproofing. The liquid emulsion No. 31 can be applied with a brush or gun. The No. 64 mastic contains long fibre Canadian asbestos. Both these materials are ready for application.

Caulking, Glazing and Pointing Compound

Aquaseal Caulking and Glazing Compound is a highly elastic, non-staining material that is impervious to the action of heat, cold, moisture and acid fumes. It retains its elasticity indefinitely and never dries out or cracks or becomes brittle. It adheres firmly to wood, stone, concrete, steel or glass, or other materials whether rough or smooth. It can be forced into the smallest crevice with the caulker's gun or knife. It is made in white, gray, red and black.

Merkin No. 91 — Transparent Waterproofing

Merkin Transparent Waterproofing is a light amber colored compound of stearates and penetrating oils, combined by a process that produces a material which, when applied to brick walls, penetrates to a definite depth below the surface and seals the pores against the entrance of moisture. It does not in any way affect the color of the walls to which it is applied. It prevents and checks efflorescence on the face of the brickwork. Its effect is immediate and lasting.

Catalogue

Our catalogue "Merkin Paints and Architectural Finishes" contains a complete description of all of our products along with specifications in a form most useful to architects. We will be glad to forward it on request.

MURPHY VARNISH COMPANY

Manufacturers of
Varnishes, Enamels, Stains and Lacquers

224 McWhorter Street
NEWARK, N. J.

6540 So. Laramie Avenue
CHICAGO, ILL.

1073 Howard Street
SAN FRANCISCO, CAL.

Products

VARNISHES:
Transparent Floor—Interior and Spar; Airplane Super Spar; No-Gloss and Semi-Gloss Interior; Velvet Floor; Four Hour.
ENAMELS:
Super White; Muronic White (gloss or semi-gloss); Da-Cote Floor and Deck; White Enamel Undercoating No. 37.
SPECIALTIES:
Waterproof Mixing for Shellac; S. S. Wall Coater; Permanent Stain; Durable Floor Lacquer; Linoleum Lacquer; Murlox.



TRADE SYMBOL

Architectural Specification Manual

A complete specification manual containing full descriptions of Murphy Products has been prepared to assist the architect or specification writer and will be gladly sent upon request.

History

For nearly seventy years the MURPHY VARNISH COMPANY has specialized on architectural finishes and these finishes may be found in many of the prominent buildings throughout the country.

SPECIFICATION GUIDE

Interior Trim—Varnish Finish

Open Grain Woods—Fill with Murphy Paste Filler, making sure to have the filler match the natural color of the wood or the stain that has been used; follow with two (2) coats of Murphy Transparent Interior Varnish or Airplane Super Spar Varnish. (If dull finish is desired by rubbing use only Transparent Interior Varnish.)

Close Grain Woods—To be finished the same as open grained woods except filler is omitted.

Dull Finish Without Rubbing—Finish the same as above, except for the final coat of varnish substitute one (1) coat Murphy No-Gloss Interior Varnish.

Semi-Gloss Finish Without Rubbing—Finish the same as for dull finish without rubbing, except substitute Murphy Semi-Gloss Interior for Murphy No-Gloss Interior.

Exterior Trim—Varnish Finish

The surface should be sandpapered and thoroughly cleaned before finishing. (No shellac should be used on outside work, inside sash, window sills, floors or other surfaces exposed to dampness.) Apply three (3) coats Murphy Airplane Super Spar Varnish. If close grained wood no filler required.

Interior and Exterior Trim—Enamel Finish

Give all sappy wood or knots a coat of thinned shellac. When dry sandpaper lightly. Apply two (2) coats Murphy White Enamel Undercoating No. 37 and follow with one (1) or two (2) coats Murphy Super White Enamel or Murphy Muronic White Enamel. These enamels may be tinted if desired.

Sealer and Finishing Coat for Plaster, Cement, Brick or Composition Board Walls (dry or damp)

Specify S. S. Wall Coater because it is formulated especially for use on plaster, cement, brick or composition board walls. It will stop suction perfectly and knit tenaciously; providing an excellent foundation for subsequent coats of any oil or varnish base product. Is used as a sealer and finishing coat.

May be tinted if desired with either japan or oil colors.

May be applied by brushing or spraying. Brushes very freely and dries to a semi-gloss white finish. May be recoated the same day.

Can be successfully used over damp plaster walls thus eliminating the usual delay in painting such surfaces.

For Finishing Concrete Surfaces

All concrete must be thoroughly dry before the application of a finishing material, as no type of finish will successfully adhere to damp concrete. Apply two (2) coats of Murphy Floor and Deck Enamel, allowing overnight dry between coats. Supplied in appropriate colors.

O'BRIEN VARNISH CO.

SOUTH BEND, IND.

BRANCH OFFICES

NEW YORK, N. Y. CHICAGO, ILL. DETROIT, MICH. MINNEAPOLIS, MINN.

O'Brien's



The Company

Makers of a complete line of varnish, paint, and lacquer products, built for master painters' use, since 1878. Pioneers in the use of synthetic resins, and in the treatment of Tung or China Wood Oil.

Present Position

Owners and developers of an exclusive "TUNG OIL TREATMENT" which permits O'Brien alone to take the very fullest advantage of the peerless natural weatherproofing and drying qualities of Tung Oil. Products containing this special vehicle are called O'Brien "T. T. O. PRODUCTS."

Service

A complete specification manual can be yours for the asking. Panels finished to order, or in an effort to obtain some distinctive finish you have in mind will be gladly furnished on request.



Prominent "T. T. O. Products"

2-Hour Varnish and 2-Hour Enamel—Synthetic Resin, T. T. O. finishes, the finest for any surface, inside or outdoors.

XLV (Exterior Liquid Velvet)—The most durable, best looking paint ever produced.

Liquid Velvet—The perfect Flat Wall Enamel.

SPECIFICATIONS

Varnish (Exterior or Interior)

1. Close Grain Woods—

(a) ***Natural Finish***—3 coats 2-Hour Varnish.

(b) ***Stained Finish***—1 coat O'Brien's Pyramid Paste Oil Stain, 3 coats 2-Hour Varnish (specify if to be rubbed).

(c) ***Satin or Dull Finish (where Cost Prevents Rubbing)***—1 coat Pyramid Paste Oil Stain, 2 coats O'Brien's 4-Hour Satin Finish Varnish. For dull finish substitute O'Brien's Q. D. Flat Oil Finish.

2. Open Grain Woods—

(a) ***Natural Finish***—1 coat Pyramid Natural Paste Filler, 3 coats 2-Hour Varnish.

(b) ***Stained Finish***—1 coat Pyramid Paste Oil Stain, 1 coat Pyramid Stained Paste Filler, 3 coats 2-Hour Varnish (specify if to be rubbed).

Enamel

1. Woodwork—3 coats O'Brien's 4-Hour Undercoat, 2 coats 2-Hour Enamel (specify if to be rubbed).

Note: Where cost demands, one coat of 4-Hour Undercoat may be omitted from the above specification.

2. Plaster, Wallboard, Sheet Metal, Steel Columns, Etc.—1 coat O'Brien's 701 Size and 4-Hour Undercoat mixed half and half, 1 coat 4-Hour Undercoat, 2 coats 2-Hour Enamel.

3. Concrete Floors—1 coat O'Brien's Neutralizing Solution (allow to dry over night, brush off all white crystals, go over spots where they form with a second coat), 1 coat O'Brien's Priming Oil, 2 coats 2-Hour Enamel.

Exterior Painting

1. Resinous Woods, Also Metal—1 coat XLV (Exterior Liquid Velvet), thinned 1 pint turps and ½ pint raw linseed oil per gallon, 2 coats XLV without thinning.

2. Non-resinous Woods, Brick, Stucco and Concrete—1 coat XLV thinned ½ pint turps and 1 pint raw linseed oil per gallon, 2 coats XLV without thinning.

3. Repaint Work—1 coat XLV thinned ½ pint turps and ½ pint raw linseed oil per gallon, 1 coat XLV without thinning.

Walls

1. New Plaster, Wall Board, Burlap, Canvas—

(a) ***Flat Finish***—1 coat Liquid Velvet Primer, 2 coats Liquid Velvet.

(b) ***Eggshell Finish***—1 coat Liquid Velvet Primer, 2 coats O'Brien's Interior Gloss with one quart Liquid Velvet added to each gallon thereof.

Note: Because of the tremendous sealing ability of Liquid Velvet Primer satisfactory jobs can nearly always be obtained with the last coat omitted from the above specifications.

(c) ***Gloss Finish (Industrial Mill-white)***—1 coat Liquid Velvet Primer, 1 coat O'Brien's Liquid Lite Enamel.

In all cases directions on can must be carefully read by painter

NATIONAL LEAD COMPANY

Member of the Producers Council

Paint Materials for the Protection and Decoration of Wood, Brick, Stone, Concrete, Stucco, Metal

NEW YORK, N. Y., 111 Broadway
BOSTON, MASS., National-Boston Lead Co., 800 Albany Street
BUFFALO, N. Y., 116 Oak Street
CHICAGO, ILL., 900 West 18th Street
CINCINNATI, OHIO, 659 Freeman Avenue
CLEVELAND, OHIO, 820 West Superior Avenue
PHILADELPHIA, PA., John T. Lewis & Bros. Co., Widener Building
PITTSBURGH, PA., National Lead & Oil Co., 316 Fourth Avenue
ST. LOUIS, MO., 722 Chestnut Street
SAN FRANCISCO, CAL., 2240 24th Street

Dutch Boy Products



Dutch Boy White Lead—Pure white lead ground in pure linseed oil. Just as white lead paint has been the standard for generations, so has Dutch Boy White Lead been a standard among white leads for years. Eight out of every ten painters use Dutch Boy. Soft paste as well as heavy paste form. 100-lb. kegs; 50, 25 and 12½-lb. pails.

Dutch Boy Red Lead in Oil—A very highly oxidized grade of pure red lead ground in pure linseed oil to paste consistency. Its exceptionally high true red lead (Pb_3O_4) content and the fineness of its pigment particles insure a paint of excellent brushing qualities, good coverage and extreme durability. 100-lb. kegs; 50, 25 and 12½-lb. pails.

Dutch Boy Liquid Red Lead—A ready-to-use, pure red lead paint weighing 28 lbs. to the gallon. Equivalent to paint made by mixing 1.85 gals. linseed oil with 100 lbs. Dutch Boy Red Lead in Oil (paste red lead). Composition by weight: Pure red lead (98% true red lead)—81%; pure raw linseed oil—18%; pure liquid drier—1%. 2½-gal. kegs; gallon and quart cans. Can also be had tinted—in light and dark brown, light and dark green, and black.

Dutch Boy Wall Primer—A special primer for sealing and first-coating plaster walls to be painted with white lead. It is a full bodied paint made with a long oil vehicle of varnish type. Stops suction, seals fire cracks, and at same time, gives good hiding. Possesses the elasticity, adhesion and other qualities of an oil primer combined with the recognized sealing property of a varnish primer, producing an ideal foundation for succeeding coats. 5, 1, and ½-gal. cans.

Dutch Boy Linseed Oil—Clear, carefully filtered, well settled, pure linseed oil conforming to the specifications of the American Society for Testing Materials. 1 and 5-gal. sealed cans.

Dutch Boy Flatting Oil—A skilfully blended flatting liquid for use with white lead to produce flat and semiflat paint for interior walls and woodwork. When white lead is thinned with flatting oil a paint results which possesses many points of excellence. It is easy to apply. It has good hiding power. It levels itself nicely. It sets slowly, so that large areas can be worked without risk of laps. It is durable and washable. Quart, gallon and 5-gal. cans.

General Painting Specifications

Following are general specifications for the painting of interior and exterior surfaces:

Preparation of Surface—***(1) Woodwork***—New woodwork shall be cut smooth with sandpaper where required and dusted clean before priming. From old woodwork which has been painted before, all loose paint, scale, dirt and dust shall be removed. Wash off with benzine or turpentine all parts where liquid paint remover has been used.

After the priming coat on new woodwork is applied, all knots and sappy streaks shall receive one coat of shellac varnish brushed out thin and all dents, cracks and other defects shall be filled with putty composed of white lead and whiting.

(2) Plaster—Before applying any paint to plaster, either new or old, see that it is clean and smooth. Fill all cracks and holes with patching plaster. Where new plaster to be painted is not properly aged, it shall be treated before priming with a solution made by dissolving 2 lbs. of zinc sulphate in 1 gal. of water.

(3) Brick and Stone—New brickwork shall not be primed until dry. At least 2 or 3 days of dry weather shall precede painting. If any mortar has become loose or damaged, all such places shall be pointed with mortar before applying paint. After priming, correct small defects in the surface with putty.

(4) Stucco and Concrete—Stucco or concrete shall be allowed to stand and dry at least six months before paint is applied. If painted before this time, it shall be treated with a solution made by dissolving 2 lbs. of zinc sulphate in 1 gal. of water.

(5) Metal Work—Iron, steel and other metal work shall be cleaned thoroughly of all loose paint, dirt, oil, grease, rust, scale and other foreign matter before paint is applied.

The Paint and Its Application—***(6) Designation of Paint to be Used***—All woodwork, plaster, brick, stone, concrete and stucco which are to be painted, shall be painted with NATIONAL LEAD COMPANY'S Dutch Boy White Lead, Dutch Boy Flatting Oil, Dutch Boy Wall Primer, pure linseed oil, pure turpentine and pure drier mixed according to the formulas hereinafter designated for each kind of work. All metal shall be painted with NATIONAL LEAD COMPANY'S Dutch Boy Red Lead-in-oil, Dutch Boy Liquid Red Lead, or pure dry red lead and pure linseed oil mixed according to formulas hereinafter given for each specific purpose.

(7) Tinting Materials—In producing tints and shades, John T. Lewis & Bros. Co. colors-in-oil or those of equally high grade shall be used. If colors-in-oil are used in quantities large enough to affect the consistency of the paint, the quantities of thinners named in the formulas shall be increased in amount equal to one-half the weight of the tinting material.

(8) Applying the Paint—No exterior painting shall be done when rain or snow is falling, during fog, or until after dew or moisture which may be on the surface has completely disappeared. Painting done in winter weather shall only be done when the temperature is above 50° F. and when all surfaces are dry. All exterior work shall be allowed to dry not less than 3 days before the next coat is applied and at least 2 days shall be allowed between coats on interior work.

Formulas

The following white lead formulas take no account of tinting materials. See paragraph No. 7 when adding colors to the formulas.

It will be noted that the formulas for painting exterior wood are on the basis of Dutch Boy *soft* paste White Lead as well as heavy paste white lead. For flat effects inside, the heavy paste is to be preferred as the higher oil content of the soft paste will give more of a sheen to surfaces painted with it.

(9) New Woodwork Outside—Three coats of paint, mixed as follows, shall be applied to new unpainted woodwork outside:

	(a) Priming coat		(b) Second coat	
	Soft Paste	Heavy Paste	Soft Paste	Heavy Paste
Dutch Boy White Lead	100 lb.	100 lb.	100 lb.	100 lb.
Pure linseed oil	3¼ gal.	4 gal.	¾ gal.	1½ gal.
Pure turpentine	2 gal.	2 gal.	1½ gal.	1½ gal.
Pure drier	1 pt.	*1 pt.	1 pt.	*1 pt.

	(c) Third coat	
	Soft Paste	Heavy Paste
Dutch Boy White Lead	100 lb.	100 lb.
Pure linseed oil	2¼ gal.	3 gal.
Pure turpentine	1 qt.	1 qt.
Pure drier	1 pt.	*1 pt.

*When boiled oil is used, reduce drier to ½ pt.

(10) Old Woodwork Outside—Two coats of paint as follows shall be applied in repainting old woodwork outside:

	(a) First coat		(b) Second coat	
	Soft Paste	Heavy Paste	Soft Paste	Heavy Paste
Dutch Boy White Lead	100 lb.	100 lb.	100 lb.	100 lb.
Pure linseed oil	1¼ gal.	2 gal.	2¼ gal.	3 gal.
Pure turpentine	2 gal.	2 gal.	1 qt.	1 qt.
Pure drier	1 pt.	*1 pt.	1 pt.	*1 pt.

*When boiled oil is used, reduce drier to ½ pt.

Note: In sections where dirt discoloration or mildew is prevalent, particularly on exposures not subjected to direct sunlight, better results will be obtained by reducing the linseed oil in the last coat, for both new and old woodwork outside, by ½ gal. and increasing the turpentine by 1 pt.

(11) New Woodwork Inside—Three coats of paint, mixed as follows, shall be applied to new unpainted woodwork inside:

	(a) Priming coat	(b) Second coat
Dutch Boy White Lead (heavy paste)	100 lb.	100 lb.
Dutch Boy Flatting Oil	3 gal.	2 gal.
Pure linseed oil	3 gal.	None
Pure drier	1 pt.	None

	(c) Third coat (Flat finish)	(d) Third coat (Eggshell gloss finish)
Dutch Boy White Lead (heavy paste)	100 lb.	100 lb.
Dutch Boy Flatting Oil	2 gal.	1½ gal.
Floor varnish	None	¾ gal.

(12) Old Woodwork Inside—Two coats of paint shall be used in repainting woodwork inside. For a flat finish, mix the paint for the first and second coats according to formula B in paragraph 11. For an eggshell gloss finish, mix the paint for the first coat according to formula B in paragraph 11 and according to formula D for the finishing coat.

(13) Plaster Walls—Three coats of paint shall be applied to plaster which has never before been painted. The priming coat shall be Dutch Boy Wall Primer or the following:

Dutch Boy White Lead (heavy paste)	100 lb.
Pure boiled linseed oil	*3 gal.
Floor varnish	2 gal.
Pure turpentine	1½ gal.

*If boiled linseed oil is not available, use 3 gal. pure raw linseed oil and 1½ pt. drier.

Mix the paint for the second coat according to formula B in paragraph 11 and according to formula C for the finishing coat if a flat finish is desired. If an eggshell finish is wanted, mix the paint for the finishing coat according to formula D.

In repainting plaster walls, follow the practice recommended for new plaster, except that the priming coat may be omitted.

(14) Stucco, Concrete, Brick and Stone—Three coats of paint, mixed as follows, shall be applied to stucco, concrete, brick or stone which has never before been painted:

	(a) Priming coat		(b) Second coat	
	Soft Paste	Heavy Paste	Soft Paste	Heavy Paste
Dutch Boy White Lead	100 lb.	100 lb.	100 lb.	100 lb.
Pure linseed oil	*2¼ gal.	*3 gal.	2¼ gal.	3 gal.
Spar varnish	2 gal.	2 gal.	1 gal.	1 gal.
Pure turpentine	1½ gal.	1½ gal.	1 gal.	1 gal.
Pure drier	None	None	1 pt.	†1 pt.

*Boiled oil is recommended. If it is not available use pure raw linseed oil and add 1½ pt. pure drier.

	(c) Third coat (Gloss finish)		(d) Third coat (Flat finish)	
	Soft Paste	Heavy Paste	Soft Paste	Heavy Paste
Dutch Boy White Lead	100 lb.	100 lb.	100 lb.	100 lb.
Pure linseed oil	2¼ gal.	3 gal.	None	None
Dutch Boy Flatting Oil	None	None	None	2 gal.
Pure turpentine	1 qt.	1 qt.	2 gal.	None
Pure drier	1 pt.	†1 pt.	½ pt.	None

†When boiled oil is used, reduce drier to ½ pt.

In repainting stucco, concrete, brick or stone, apply two coats. Mix the paint for the first coat according to formula B in paragraph 14 and according to formula C or D for the second coat.

A semiflat finish on brick, stone, concrete and stucco can be secured by applying over the second coat one or two coats of paint made with 100 lbs. heavy paste white lead, 1½ gal. flatting oil and ¾ gal. spar varnish. For brick red finish on outside brick thin the color with Dutch Boy Flatting Oil.

(15) Metal Work, Exterior and Interior—Three coats of paint, mixed as follows, shall be applied to exterior and interior metal work:

	(a) First coat	(b) Second coat (light brown)
Dutch Boy Red Lead-in-oil	100 lb.	100 lb.
Pure linseed oil	*2⅜ gal.	*2½ gal.
Lampblack-in-oil	None	12 oz.
Pure turpentine	1 pt.	1 pt.
Pure drier	1 pt.	1 pt.
	or	
Pure dry red lead	100 lb.	100 lb.
Pure linseed oil	*3⅝ gal.	*3¾ gal.
Lampblack-in-oil	None	13 oz.
Pure turpentine	1 pt.	1 pt.
Pure drier	1 pt.	1 pt.

	(c) Third coat (dark brown)
Dutch Boy Red Lead-in-oil	100 lb.
Pure linseed oil	*3⅝ gal.
Lampblack-in-oil	6 lb.
Pure turpentine	1 pt.
Pure drier	1 pt.
or	
Pure dry red lead	100 lb.
Pure linseed oil	*5 gal.
Lampblack-in-oil	6½ lb.
Pure turpentine	1 pt.
Pure drier	1 pt.

*If genuine boiled linseed oil is available, use one-third boiled and two-thirds raw oil, omitting drier.

If liquid red lead is to be used, specify Dutch Boy Liquid Red Lead No. 1 (natural red lead color) for first coat, Dutch Boy Liquid Red Lead No. 6 (light brown) for second coat and Dutch Boy Liquid Red Lead No. 7 (dark brown) for third coat.

Where a dark color other than brown is desired for the finishing coat, one of the following formulas shall be used according to the color desired:

	Light green	Dark green
Dutch Boy Red Lead-in-oil	100 lb.	100 lb.
Pure linseed oil	5½ gal.	4 gal.
Medium chrome yellow-in-oil	30 lb.	12½ lb.
Chinese blue-in-oil	12 lb.	7½ lb.
Pure turpentine	1 pt.	2 pt.
Pure drier	1 pt.	2 pt.

	Black
Dutch Boy Red Lead-in-oil	100 lb.
Pure linseed oil	14 gal.
Chinese blue-in-oil	16 lb.
Lampblack-in-oil	52 lb.
Pure turpentine	½ gal.
Pure drier	½ gal.

If liquid red lead is to be used, specify Dutch Boy Liquid Red Lead according to the finishing color desired, that is: No. 8—light green; No. 9—dark green or No. 5—black.

Specifications in Pamphlet Form

Specifications for the use of white lead and red lead in painting are available in pamphlet form and will be sent to any architect or engineer interested. Write for "Specifications for the use of White Lead" or "Standard Specification for the use of Red Lead."

Other Publications

A practical book, of unusual value to those interested in the subjects of paint and painting, is our "Handbook on Painting." This book gives formulas and directions for exterior and interior work of all kinds. It covers, in complete detail, the painting of wood, plaster, brick, stone, concrete, stucco and metal.

We also publish a booklet, "Structural Metal Painting," which discusses the causes of corrosion and remedies for it, besides giving formulas and going into detail on the subject of painting structural metal of all kinds.

THE PASSONNO-HUTCHEON CO.

Paints, Varnishes and Enamels

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A full line of ARCHITECTURAL PAINTS, VARNISHES and ENAMELS.

Also Aluminum Paint; Aluminum Vehicle; Semi-paste Whites; Rust Preventing Structural Iron Paint in black, red, green and gray; Cement Paints; Roof Cements; etc.

The Company

The principals of this company have been engaged in manufacturing and selling Paints, Varnishes and Enamels for thirty-five years. Today THE PASSONNO-HUTCHEON CO. stands out as one of the most successful Paint and Varnish concerns in the United States.

Olotone Flat Oil Paint

A flat oil paint of great covering and hiding quality. For all interior work, such as walls, ceilings, woodwork, etc. Spreads easily and flows out to a beautiful flat finish. Made in white and colors.

Olo-Seal

An oil size for use under paints, calcimine and wall coatings. It kills suction. Prevents lime and stains from striking through the top coats. Olo-Seal contains no rosin or glue.

Satin-Amel

A high grade Egg-Shell Enamel Paint with excellent hiding qualities. Provides a satisfactory one-coat finish over old paint. Satin-Amel can be washed with soap and water, hence is an ideal finish for use in schools, hospitals, office and public buildings or any interior that requires frequent washing. Made in white and colors.

Master Painters' 80-20 White

Made of 80% carbonate of lead, 20% zinc oxide ground in pure linseed oil and turpentine dryer.

Shingle Stain

A penetrating, preservative stain for wood shingles and rough sawed sidings. All colors.

Roc Seal Cement Coating

For exterior or interior painting of cement, stucco, brick or plaster. Dries with a flat velvet finish. Roc Seal penetrates the surface and prevents it from disintegrating. Made in white and colors.

Enamelac 4-Hour High Lustre Enamel

A quick drying interior enamel. It dries in four hours, works easily and can be applied over any varnish or paint surface without raising old finish. Made in white and colors.

Olo-Lite Enamel

For interior or exterior work where only the highest grade enamel is desired. It is easy to apply and is made with specially treated oils, turpentine, turpentine dryer and pure French process zinc. No better enamel can be made. Made in white and colors.

Olo-Lite Enamel Undercoat

A hard-drying, flat finish undercoat for all enamels. It covers well and can be sanded to a very smooth finish.

Varnishes

Olo-Speed Universal Four-Hour Varnish—A high quality varnish that dries ready for use in four hours.

Olo-Spar—A pale, quick-drying elastic universal varnish for exterior or interior work. Will not mar white or turn white under hot or cold water.

Elastic Floor Finish—A pale, elastic finish for floors. Withstands hard usage and will not scratch white or show heel marks.

Elastic Interior Finish—A pale interior varnish for use where great durability is required. It is adaptable for all interior work. Dries with a high full gloss and, if desired, can be rubbed to a dull finish.

Olo-Var Floor Finish—A high grade moderately priced waterproof varnish. Dries hard over night. Will withstand hard usage.

Olo-Var Interior Finish—Similar in quality to Olo-Var Floor Finish but made especially for trim work, etc.

A moderately priced product of excellent quality.



Juvenile Court Building Group of Cuyahoga Co., Cleveland, Ohio
Interior decorating was done with Olo products

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Foreword

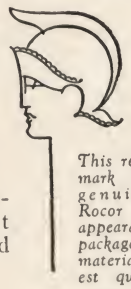
All Roman products are manufactured to highest standards, under rigid laboratory control and time-tested formulae. A work manual for the architect and contractor is published giving detailed specifications and describing the proper use of each Roman product and the best and most economical method of procedure. Color samples are available and sample bags of dry material in color for exact color determination and textural experimentation on the job are furnished upon request.

For Roman Stucco, Roman Architectural Finish, Audicoustone Acoustical Plasters and other Roman products, see Manufacturers' Index.

ROCOR CEMENT PAINT

A Waterproofed Portland Cement Paint in White and Color

Rocor Cement Paint is a *true* portland cement paint. It contains no oil or organic binders. Rocor Cement Paint is especially designed for use on masonry surfaces and is unaffected by the chemical action of alkalies that frequently destroy other paints used. Rocor Cement Paint forms a natural "stay-put" bond and becomes a permanent, integral part of the wall itself. It resists erosion and is not easily affected by the wear and tear of the elements.



This registered trade mark indicates the genuine Roman-Rocor product. Its appearance on the package indicates a material of the highest quality and is your protection against substitution.

Uses and Adaptability of This Effective Dampproof Paint

Rocor Cement Paint is a permanent, dampproof paint and is the correct material to use in damp and musty basements, cellars, tunnels and subways. Its use is recommended over portland cement stucco and for all exterior masonry surfaces, and as a cement paint over concrete in outdoor swimming and wading pools.

Rocor Cement Paint will not disintegrate in the presence of moisture and should be used wherever condensation is likely to occur. For this reason and for its light-reflecting quality, it is the ideal material for painting the interior masonry surfaces of ice plants, laundries, cold storage warehouses and breweries, and for indoor swimming pool, shower, toilet and steam rooms.

Readily Cleaned

Permanently decorative, sanitary and fireproof, Rocor Cement Paint can be easily cleaned with soap and water as often as desired, without injury to the material.

Colors

A range of 15 attractive colors, including snow white, are obtainable. Only mineral pigments of the finest quality, tested for strength, purity and permanency, are used in Rocor Cement Paint.

ROCOR CEMENT PAINT STANDARD COLORS

No.	Color	No.	Color
200	Snow White	217	Steel Grey
201	Weathered Cream-Grey	223	Brick Red
203	Light Buff	224	Pink Buff
205	Yellow Cream	234	Brown
206	Dark Buff	257	Pink
207	Limestone Grey	268	Sea Green
210	Golden Rod Yellow	270	Terra Cotta
216	Ivory		

Specifications—Short Form

"All surfaces (indicate) shall be painted with two coats of Rocor Cement Paint as made by Roman Plastic Products Corporation, Bush Terminal, Brooklyn, N. Y. Material shall be delivered to the job in unopened, sealed containers. Nothing but clean, drinkable water shall be added and the paint shall be mixed and applied over properly prepared, clean surfaces and cured with water, all in accordance with printed directions which the manufacturer will furnish to the contractor upon written request."

Note: Indicate whether brush, spray or gun application is desired.

Coverage and Package

Rocor Cement Paint is delivered to the job in dry powder form ready for use after the addition of water. It is packed in 10 and 50-lb. sealed drums, and in 100-lb. moistureproof bags. One pound of material mixed with one pint of water will cover approximately 10 to 18 square feet in *two coats* depending upon the porosity and evenness of the surface covered and the heaviness of application.

ROMAN TEX

An Improved Textural Plastic for All Interiors

Roman Tex is an improved textural plastic wall finish in white or color for all types of interior walls and can be applied over practically any surface.

A true plastic in every sense, it lends itself economically, easily and readily to all types of wall treatments, whether a replica of an old English texture or a modern finish of intricate geometric design. Roman Tex offers endless possibilities to both architect and interior decorator, in new buildings or for beautifying, renovating and remodeling the interiors of old structures.

A Thoroughly Practical Material

Roman Tex is scientifically prepared and manufactured to a formula that has been thoroughly tested under practical usage. It has no unpleasant odor and its use causes no inconvenience in occupied buildings.

Roman Tex can be applied with brush or trowel; any texture is easily produced with it. It is shipped as a dry powder, ready for application after mixing with plain water. Because of its rich plastic properties, effects may be obtained ranging from the smoothest finishes to the most heavily developed textures.

There is no tendency for Roman Tex to thin out or sluff off during the application or setting period. Because it can be textured at once if desired or within an hour after it has been applied, Roman Tex is an extremely practical material. Delays are avoided and overtime eliminated by its use.

No surface treatment need be given to colored Roman Tex for ordinary use. Nevertheless, it may be glazed, shellacked, painted or waxed if desired.

Color

The basic color of Roman Tex is a pure white, making the most delicate pastel shades easy to achieve. In addition, a range of 12 beautiful colors offers many possibilities for new and interesting color effects or polychrome combinations. Uni-

formity of color distribution is assured by machine-mixing. All colors for Roman Tex are processed by ourselves and tested, in our own laboratories, for their lasting qualities and color purity.

ROMAN TEX STANDARD COLORS

No. Color	No. Color
600—White	612—Peach
603—Light Buff	613—Green Yellow
605—Cream	616—Ivory
608—Nile Green	619—Orchid
610—Maize Yellow	622—Pale Pink-Buff
611—Light Brown	623—Pink

Color effects are not limited to the white basic color, nor to any single shade of the material as ordered. Polychrome effects can be readily produced by mixing two or more colors, by glazing or by the use of Roman Tex-Tints surface treatment.

Adaptability and Ease of Application

Roman Tex can be applied over gypsum brown or hard white coat. Wall boards make economical and ideal bases for Roman Tex, particularly for the extra room in attic or basement. When the surface is properly prepared, Roman Tex can be applied over glass, wood and metal; in fact, over any solid, substantial base. Over non-absorbent bases, a small quantity of fine sand added to shellac, applied in a thin coating and allowed to dry overnight, provides a firm grip and makes the application of Roman Tex simple and easy. Surfaces of an absorbent nature are usually wetted sufficiently to stop momentary suction and to prevent the absorption of water from the finish. When excessive suction is encountered, the surface should be sized.

Specifications—Short Form

"All wall and ceiling surfaces not otherwise specified (or indicate) shall be finished with Roman Tex as made by Roman Plastic Products Corporation, Bush Terminal, Brooklyn, N. Y. Material shall be delivered to the job in unopened, sealed packages. Nothing but clean water shall be added and the material shall be mixed and applied over properly prepared surfaces, all in accordance with the printed directions which the manufacturer will furnish to the contractor upon written request. Sample panels in color and texture shall be made by the decorator and approved by the architect before work is begun."

Note: A schedule should be used for color and textural treatments for various rooms and the architect should note whether the surface is to be:

(a) in colored Roman Tex as supplied by the manufacturer.

(b) in color produced by the use of colored material and/or colored sand.

(c) in a polychrome effect, produced by the use of Roman Tex-Sealer and Roman Tex-Tints (Polychromic surface treatment described below).

(d) after the Roman Tex surface is sized with Roman Tex-Sealer (for soft finishes) or, with white lead and oil (for high lustre), it shall be glazed with Roman Tex-Glaze, tinted with colors ground in oil and wiped off to produce a multitone effect.

(e) painted with ..... coats of ..... paint, and glazed with uncolored Roman Tex-Glaze.

(f) in Caenstone, Travertine or other stone finish, jointed to simulate masonry.

Coverage and Package

Roman Tex is delivered to the job in 25 and 50 lbs. moistureproof bags. Having a low volume weight, Roman Tex has a proportionately higher covering capacity. One pound of Roman Tex will cover ½ to 2 square yards of surface, depending upon the type of base and the texture. Most textures, applied over comparatively even surfaces require on an average of a pound of Roman Tex to each square yard.

ROMAN TEX AIDS—SEALER, GLAZE, TEX-TINTS

Roman Tex-Sealer

A perfect base for glazing is essential. Roman Tex-Sealer, used to "even-up" suction and allowed to dry out overnight before the application of Roman Tex-Glaze, will insure uniformly perfect work. It should not be used as a base for Roman Tex; nor as a peneterative size where shellac, China wood oil, varnish, etc., are generally used.

Roman Tex-Sealer is an effective and economical *film* sealer and its use is recommended before glazing over any plastic paint. It may be used as a colorless water glaze and when used for this purpose, it produces a water-resisting surface that can be readily cleaned. Directions for mixing and application come with each package.

Roman Tex-Sealer comes in 1 and 5 lb. sealed packages as a dry powder ready for use after adding water.

Roman Tex-Glaze

Roman Tex-Glaze, especially prepared for use with Roman Tex, is an efficient, dependable glazing medium. Its use is recommended whenever an oil glaze is preferred. It contains no wax and its use will permit future redecoration. Roman Tex-Glaze dries flat with a soft sheen, producing a durable, wear-resisting and washable surface.

Roman Tex-Glaze may be used as an uncolored glaze, or may be tinted with colors ground in oil that are usually slightly thinned with turpentine. Blended and polychrome effects are generally worked out on the wall . . . the various colors are first spotted, and blended out by wiping the edges, after which the body color is brushed on and wiped with a cloth moistened with turpentine. It is *always* advisable to seal the surface before glazing . . . for a high lustre, an undercoat of white lead and oil is recommended; for a softer finish, an undercoat of Roman Tex-Sealer.

Roman Tex-Glaze in drying allows ample time for the decorator to achieve the desired effect and the architect in specifying Roman Tex-Glaze may be confident of satisfactory results.

Coverage and Package—Roman Tex-Glaze comes in quart and gallon containers. Applied over average surfaces on which the suction is under control, one quart covers approximately 75 to 100 square feet. Directions for use are printed on each package.

Roman Tex-Tints

An Economical Polychromic Surface Treatment for Roman Tex—Beautiful and striking polychrome effects can be achieved easily, effectively, and economically over Roman Tex by the use of Roman Tex-Tints . . . a colored powder which, after mixing with water, is simply applied with sponge or wide brush. Excess Roman Tex-Tint is wiped or sponged off shortly after application to produce the effect desired.

Roman Tex-Tints dry with a soft sheen, without destroying the soft color value of Roman Tex. They produce a washable surface that can be easily cleaned and will not peel or flake off.

Simplicity of Application—Multi-tone effects are very easily produced with Roman Tex-Tints and a little experimentation will readily produce the desired effect. Roman Tex-Tints may be mixed with one another to produce other colors. White may be used to lighten darker colors. Suction is best controlled by a thin application of Roman Tex-Sealer which should be permitted to dry out before Roman Tex-Tint is applied. Roman Tex-Tints can be used immediately after mixing and dry within an hour. Only sufficient material should be mixed at one time to be used within three hours.

The material is not a paint. It is made solely to produce multi-tone effects. Colors are spotted and blended very much in the same manner as with colored glaze. The material is constantly stirred while in use and all excess Tex-Tint is sponged or wiped off within 15 or 20 minutes after application.

ROMAN TEX-TINTS STANDARD COLORS

No. Color	No. Color
A1—White	A6 —Blue
A2—Orange	A7 —Yellow
A3—Travertine	A8 —Buff
A4—Brown	A9 —Red
A5—Green	A10—Black

Coverage of Roman Tex-Tints—Roman Tex-Tints come in 1 and 5 lb. containers; 1 lb. will make 1 gal. of material covering from 200 to 400 square feet, depending upon the texture of the surface to be covered. Directions for mixing and use come with each package.

ROCORLITE INTERIOR PAINT

A Durable, Economical Flat Wall Paint

Rocorlite is an interior flat wall paint in dry powder form which, after mixing with ordinary water, makes a perfectly blended, easy-spreading paint that dries smooth and without gloss, producing a durable, wear-resisting surface. It is designed for application over any *interior* wood, plaster or masonry surface *not previously painted.*



Adaptability for General and Industrial Uses

In residences, hotels, apartment houses and public buildings, Rocorlite is used to advantage on *unpainted* hard white and sand finish plaster and on colored finish plaster that has become soiled. Because of its excellent light-reflecting qualities and especially its economy and permanency, Rocorlite is particularly recommended for all industrial interiors, factories, garages, warehouses, etc.

Rocorlite is fireproof, sanitary and durable, costs considerably less than almost any other type of permanent decoration, can be applied with brush, spray or gun, and *one good coat is generally sufficient!*

Colors

There is a wide range of standard colors from which an easy selection can be made. Where the quantity warrants, special colors to match any desired color will be made.

ROCORLITE INTERIOR PAINT STANDARD COLORS

No.	Color	No.	Color
900	White	912	Peach
903	Light Buff	913	Green Yellow
905	Cream	916	Ivory
908	Nile Green	919	Orchid
910	Maize Yellow	922	Pale Pink-Buff
911	Light Brown	923	Pink

Specifications—Short Form

"All interior surfaces not otherwise specified (or indicate) shall be painted with one coat of Rocorlite as made by Roman Plastic Products Corporation, Bush Terminal, Brooklyn, N. Y., in color as selected by the architect. Material shall be delivered to the job in unopened, sealed containers and nothing but clean drinkable water shall be added to the material. It shall be mixed and applied over clean, dust-free surfaces, all in accordance with the printed directions which the manufacturer will furnish to the contractor upon written request."

Note: *Two coats are sometimes advisable when lighter colors are used over dark surfaces. Material will be furnished to make tests in the interest of economy. Indicate whether brush, spray or gun application is desired.*

Coverage and Package

Rocorlite is shipped in 10 and 50-lb. sealed drums, and in 100-lb. moistureproof bags, ready for use after adding water. One pound of Rocorlite usually covers from 20 to 50 square feet in one coat, depending upon the evenness of the surface to be covered and heaviness of application.

MOTHITE PLASTIC MOTH-REPELLENT

An Economical, Moth-Repellent Cedar Closet Lining in Plastic Form

Mothite is a plastic moth-repellent. The characteristic, pleasant aroma of cedar and the presence of other scientific moth-repellent factors, increase the efficiency of Mothite, and assure greater protection. Mothite can be economically and effectively used in closets and storage rooms in old or new buildings. With Mothite, this advantage is secured at low cost.

Sanitary—Completely Seals the Surface

Mothite completely seals the surface. In old buildings, it seals cracks and openings caused by shrinkage of door frames, baseboards, shelving, etc. It may be applied over the gypsum brown coat and on almost any type of interior surface properly prepared for its reception. It can be applied by brush or trowel and, therefore, can be included in either paint or plaster specifications.

Color

Mothite Plastic Moth-Repellent is made in cedar red only.

Specifications for Mothite

"All closets (indicate) shall be finished with Mothite Plastic Moth-Repellent as manufactured by Roman Plastic Products Corporation, Bush Terminal, Brooklyn, N. Y., and shall be applied in accordance with manufacturer's directions."

Note: *Mothite may be included in paint or plaster specifications. Trowel application is generally preferred on new work, and where hard white coat is omitted. For application to painted surfaces, special specifications will be sent.*

Coverage

Mothite is shipped in 10 and 50-lb. sealed containers. One pound usually covers from ½ to 1 sq. yd., depending upon the type of surface to be covered.

Note: *The fragrant aroma in cedar wood and Mothite comes chiefly from a volatile oil. Therefore, Mothite Liquid, a special preparation, is available for renewing periodically the cedar aroma of Mothite installations and of cedar wood closets.*

OTHER ROCOR PRODUCTS FOR SPECIFIC PURPOSES

Rocor Floor Hardener

A permanently effective surface hardener for cement, concrete and terrazzo floors.

Rocor Hardener fills surface pores, prevents dusting and produces a hard, dense surface, resists wear, and permits easy cleaning with water.

Detailed specifications and full directions for use and application will be sent upon request.

Rocor Putties and Caulking Compounds in Color

We are naturally equipped to manufacture special glazing and caulking compounds in color, scientifically designed and colored to suit specific purpose for which the material is intended.

Architects should indicate requirements, stating where and for what purpose material is desired, enclosing sample of color to be matched.

Test samples in color will be sent promptly with detailed specifications.

Rocor Patching Plaster

A special plaster for patching walls in old buildings . . . bonds and sets hard without shrinkage.

Rocor Patching Plaster comes in white only, in 1 and 5-lb. sealed packages, and in 50-lb. moistureproof bags.

SLEIGHT BITUMINOUS PRODUCTS CO.

Manufacturers of Bituminous Solutions, Enamels and Paints

Keyser Building
BALTIMORE, MD.

BRANCH OFFICES AND DISTRIBUTORS IN ALL LARGE CITIES

The Company

The Sleight Bituminous Products Company is an organization of highly trained and experienced specialists in the manufacture of all types of bituminous products.

A background of more than thirty years in the study of the bitumens has given this Company unusual qualifications in its field.

Engineering Service

The great development of the many products of the Sleight Company has been and is being extensively aided by the scientific research department of the Company. The services of this department and of the engineers and specialists of the Company are at the disposal of architects and engineers through the branch offices and distributors located in principal cities.

MULLER'S LIQUID WALL COVERING

Muller's Liquid Wall Covering has been developed for the priming and first coat on wet, newly plastered walls. Its vehicle is composed of two bitumens, coal-tar and petroleum and their by-products, together with white lead and other inerts.

The unique feature of this product and one which means a considerable saving of time is that the covering *must* be applied over wet walls. Freshly plastered walls may be covered successfully five minutes after the plastering is completed and the second coat, where desired may be applied six hours after the first coat. The finishing coat of oil paint can follow six hours after the second coat.

Muller's Liquid Wall Covering can be used as a finishing coat and much of it is used for this purpose. The first coat may be spread but the second must be flowed on. Muller's comes in white only but turns ivory with age. Where special tints are required any good color ground in oil may be added to the Covering.

Since Muller's does not contain any oxidizing oils it is important that no foreign oils or thinners be mixed with the Covering. It comes from the container ready to apply with a brush; if spray is to be used the Covering must be thinned only with Muller's Thinner.

Muller's is recommended for use on the interior only. However, many of our customers have used it on the outside of stucco houses with most satisfactory results.

The question is sometimes asked "What becomes of the water which is sealed in the walls by applying Muller's Liquid Wall Covering?" Such water dries out eventually through the connections to the ceiling and floor and through the trim connections. The usual period for drying out thoroughly is three months.

To avoid swelling and warping of wood trim all woodwork coming into contact with the wet plaster should be primed on the underside with the Covering before installation.

After it is thoroughly dry Muller's becomes nonporous and can be washed without damage with soda, washing powder, lyes and strong caustic soaps.

A Few Installations

Philadelphia Electric Co., Philadelphia, Pa.
Wills Eye Hospital, Philadelphia, Pa.
First National Bank Building, Baltimore, Md.
Maryland Trust Building, Baltimore, Md.
Delaware Power & Light Co., Wilmington, Del.
Presbyterian Hospital, Philadelphia, Pa.

OTHER SLEIGHT PRODUCTS

Dairy White

This product was originally developed for use in dye houses and bleacheries in the textile industry where the requirements and controlling conditions called for an unusual covering. As the White contains nothing poisonous it soon became popular for use in dairies and bakeries not only for coating walls and ceilings but for application on tanks, vats, etc. It does not discolor at temperatures up to 250 degrees Fahrenheit and will continue adhering up to a temperature of 400 degrees. It is now widely specified for every interior purpose in paper and pulp mills and in food product plants, hospitals, and institutions.

Dairy White is a non-oxidizing material and contains no linseed oil, china wood or other oils commonly used in paints and no zinc or lead. It dries by evaporation and the more air circulated the quicker and harder it will dry. It has a very high gloss and dries very hard.

This White can be applied directly on any material if the surface is thoroughly cleaned of rust, dirt and oil. It will adhere to a fairly damp surface and ordinarily dry sufficiently in six to eight hours for the second coat to be applied. We recommend two or three coats.

Typical Installations

Rice's Bakery, Baltimore, Md.
Ralph & Paul Adams, Bridgeville, Del.
Port Huron Sulphite Company, Port Huron, Mich.
Maison Au Magenheimer, Brooklyn, N. Y.

Three Point Bituminous Products

Three Point Black Bituminous Solution—This Solution is for undercoating on exposed steel work or metal of any kind and is applied in the same way as ordinary paint. It is impervious to dampness, heat and cold and is not affected by sulphur fumes or ordinary acid solutions. It is a brilliant black and may be used by itself as a coating.

Three Point Bituminous Enamel—This is the overcoat and is applied hot with a "brush" or "pouring" coat, depending on the thickness required. It is used where absolute protection is necessary and where it would be difficult to get at surfaces because of their being underground or otherwise covered.

Typical Installations

The Obrecht Lynch Corp., Baltimore, Md.
Baker Whitely Coal Co., Hooversville, Pa.
Canadian Steamship Company, Montreal, Canada
Novelty Steam Boiler Works, Baltimore, Md.

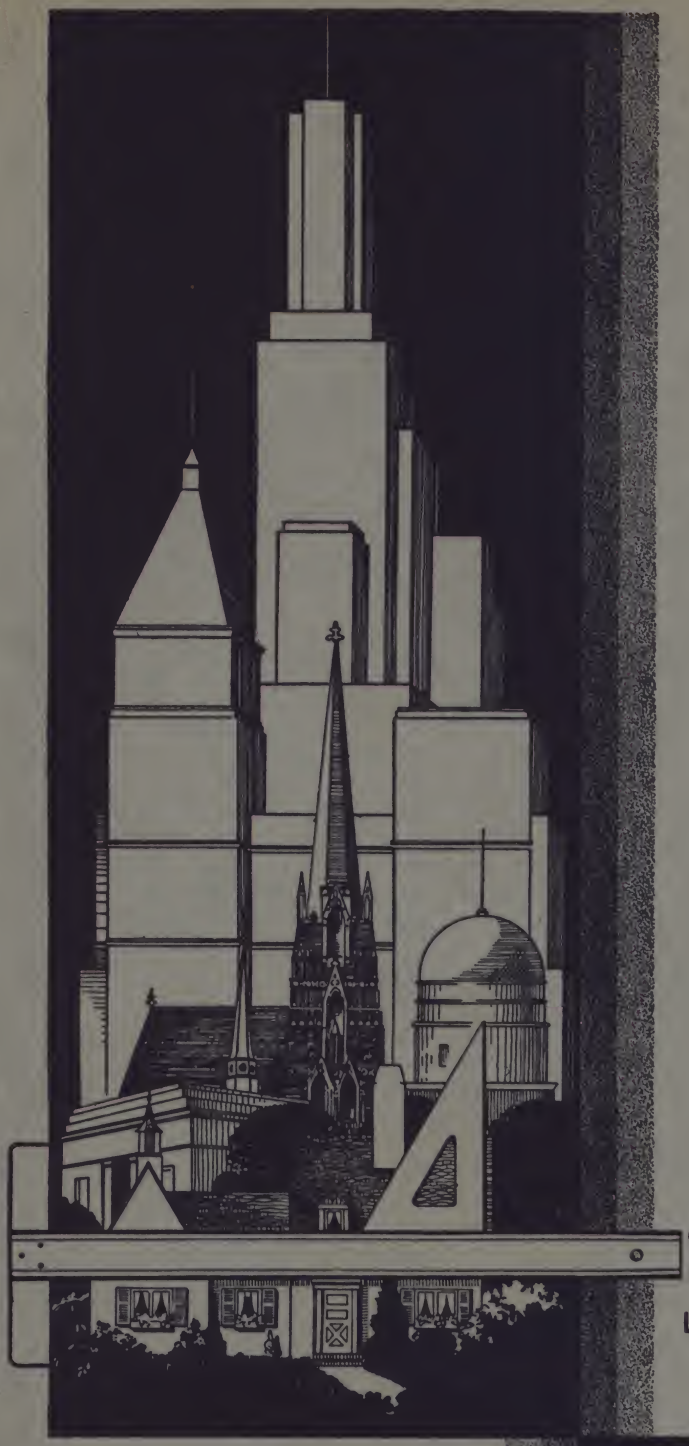
Three Point Solutions in Colors—These solutions can be painted over either the Bituminous Solution or the Enamel with the same ease that oil paints are applied over wood surfaces. They are proof against most acids and alkalis and are water and weatherproof. Standard colors are white, yellow, buff, grey, green, red, maroon and black. Special colors can be prepared on request.

Three Point Concrete Solution

Sleight Three Point Concrete Solution contains no oils or turpentine and is applied to damp or wet concrete within 24 hours after laying. It is used on cellar floors, porches, and any concrete surface to prevent dusting and color the concrete. It penetrates deeply and gives unusual wear under heavy traffic conditions. This solution is applied with a brush as it comes from the can, or it can be sprayed if thinned with a special Thinner furnished by the Company. Standard colors are black, grey, red and maroon. Special colors can be supplied on request.

Typical Installations

The Candler Building Company, Baltimore, Md.
E. J. McGraw Real Estate Co., Baltimore, Md.
Keyser Office Building Company, Baltimore, Md.
Spalding Knitting Mills, Griffin, Ga.



COVER THE EARTH

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THE SHERWIN-WILLIAMS CO.

LARGEST PAINT AND VARNISH MAKERS IN THE WORLD

A BOOK OF PAINTING, VARNISHING AND LACQUERING SPECIFICATIONS

DEPARTMENT OF ARCHITECTURAL SERVICE

CLEVELAND

THE SHERWIN-WILLIAMS CO.

Manufacturers of Paints, Varnishes, Lacquers, Stains, Enamels, Fillers, Undercoaters, Concrete Finishes, Waxes, Dampproofing, Plaster Bond, Polishes, Cleaners, Wood Preservatives, Concrete Hardner

THE SHERWIN-WILLIAMS Co. makes a finish for every surface. Sixty-five years in the paint business has proved that there is no general paint for all uses. Different conditions require different treatment, and each Sherwin-Williams product is therefore made for a particular purpose.

Sherwin-Williams Paints, Varnishes, Stains, Lacquers, etc., represent the best technical knowledge in the production of such finishes today. In specifying Sherwin-Williams Products, the architect may know that he is giving his client the benefit of the world's best knowledge. No individual painter can purchase raw materials and mix paints that will equal those made in a factory. Hand stirring never will equal machine grinding. Man-mixed products will never be as good as those made with the mechanical efficiency used in the Sherwin-Williams Plants. And the constant check which Sherwin-Williams maintains on its raw materials safeguards the quality of the finishes produced. Sherwin-Williams standardization allows the architect's client to obtain at a later date identical material which will match absolutely the product used originally on the building.

LOCAL REPRESENTATIVE

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FOREWORD TO SPECIFICATIONS

The following specifications are intended to cover the entire field of finishing walls, floors, and woodwork. For additional information, address THE SHERWIN-WILLIAMS Co., Department of Architectural Service, 101 Prospect Avenue, N. W., Cleveland, Ohio, or any of the Branch Offices listed on page 13.

METAL PROTECTIVE COATINGS

In the following specifications, which apply to buried and exposed steel alike, Sherwin-Williams Kromik Metal Primer and Sherwin-Williams Metalastic are called for. These materials are recommended for the following reasons: Kromik Metal Primer is particularly suited for use as a protective coating applied directly to bare metal; Metalastic is especially manufactured to be a final protective coating which will staunchly guard against danger to undercoats.

In the manufacture of Sherwin-Williams Kromik Metal Primer, chromates play an important part. Chemists explain that chromates tend to render the surface of steel passive, and thus their use in a priming coat is a further preventive against action of rust. Kromik Metal Primer has the following advantages over ordinary Red Lead, which in itself is recognized as a standard material, and which is actually an excellent paint: Kromik is noticeably easy to apply, especially on difficult and inaccessible members; is not affected by sulphur fumes in the air; shows remarkable durability where the metal is allowed to stand for long periods of time before being re-coated; inhibits corrosion; shows a favorable lower material cost. Kromik is the Sherwin-Williams standard specification for a priming coat on bare metal.

Sherwin-Williams Metalastic is a protective coating of the graphite type. Being a full oil paint, it dries with a tough, durable, and exceedingly tight film, with high water-shedding properties. It is the standard Sherwin-Williams specification for finishing coats on structural steel work.

The use of Kromik Metal Primer and Metalastic together is definitely advised, owing to their having the same degree of elasticity, which tends to make the finished coating less apt to break down under severe conditions.

Exterior Exposure

Specification No. 1—Before applying the priming or shop coat, all rust, mill scale, grease, and foreign matter shall be removed from the surface to be painted. No painting shall be done in wet or freezing weather, and no surface that is either damp or wet shall be painted.

First Coat—The priming or shop coat shall be applied before shipment to site. Apply Sherwin-Williams Kromik Metal Primer in the consistency supplied by manufacturer. Two coats of this material shall be applied to riveted and bolted connections, and to parts not easily accessible after erection. *No thinner shall be added without written approval of the architect or engineer.*

Note: Any portions of the surface which have become abraded in transit shall be "spotted" with Kromik Metal Primer before application of second (first field) coat.

Second Coat—This is the first field coat. Apply Sherwin-Williams Metalastic Brown, in consistency supplied by manufacturer.

Third Coat—Apply Sherwin-Williams Metalastic Black, after the second coat (first field coat) is entirely dry. Use in consistency supplied by manufacturer.

Iron or Steel Surfaces Exposed to Acid Fumes

Specification No. 2—Before applying the priming or shop coat, all rust, mill scale, grease, and other foreign matter shall be removed from the surface to be painted. No painting shall be done in wet or freezing weather, and no surface that is damp or wet shall be painted.

First Coat—Priming or shop coat shall be applied before the steel is shipped to the site. Apply Sherwin-Williams Kromik Metal Primer in the consistency supplied by manufacturer. Two coats of this material shall be applied to riveted or bolted connections, and to parts not easily accessible after erection. *No thinner shall be added without written approval of the architect or engineer.*

Note: Any portions of surface which have become abraded in transit shall be "spotted" with Kromik Metal Primer before application of second (first field) coat.

Second Coat—This is first field coat. Apply Sherwin-Williams Non-Corrodible Acid Resisting Paint, Black.

Hot Surfaces (Stacks, Flues, Pipes, etc.)

Specification No. 3—All rust, dirt, grease, etc., shall be cleaned from the surface to be painted.

First Coat—Apply Sherwin-Williams Salamander Black, in the consistency supplied by manufacturer.

Second Coat—After first coat is dry, use same material for second coat.

Exterior Ornamental Iron Work—Flat Black Finish

Specification No. 4—All rust, mill scale, grease, and other foreign matter shall be removed from the surface to be painted. No painting shall be done in wet or freezing weather, and no damp or wet surface shall be painted.

First Coat—Before shipment to site apply one coat of Williams Kromik Metal Primer as supplied by manufacturer.

Second Coat—This is the first field coat. Apply Sherwin-Williams Metalastic Black.

Note: Any portions of surface which have become abraded in transit must first be "spotted" with Kromik Metal Primer before application of second (first field) coat.

Third Coat—This is the final, finishing coat. Apply Sherwin-Williams Quick Drying Color Black, thinned with turpentine, mixed with linseed oil as follows: Two parts of black *by bulk*, to one part of turpentine, and one part of oil *by bulk*. Mix by adding turpentine to black, and when thoroughly stirred, add linseed oil.

Exterior or Interior Metal Work—Verde Antique Finish

Specification No. 5—All rust, grease, resin, dirt, etc., shall be removed from the surface to be painted.

First Coat—Prior to shipment to site, apply one coat Sherwin-Williams Kromik Metal Primer in consistency supplied by manufacturer.

Note: Any portions of surface which may have become abraded in transit shall be "spotted" with Kromik Metal Primer before application of second (first field) coat.

Second Coat—This is the first field coat. Apply SWP (Sherwin-Williams Paint, Prepared) shade No. 393.

Third Coat—This is the finishing coat. Apply a brush, stipple coat of SWP No. 355, tinted with Sherwin-Williams First Quality Oil Color Paris Green to shade approved by architect.

Painting of Galvanized Iron

Specification No. 6—All galvanized iron surfaces such as gutters, down-spouts, etc., shall be primed with one coat of Sherwin-Williams Galvanized Iron Primer (see Specification No. 60).

DAMPPROOFING OF FOUNDATIONS

Exterior Surfaces of Foundations

Sherwin-Williams Antydamp is a damp-resisting, alkali-proof, acidproof, black paint of asphalt type. Heavy in body, it will remain in a semi-tacky condition and elastic indefinitely. This prevents cracking of film with resulting penetration of moisture.

Specification No. 7—***First Coat***—Apply Sherwin-Williams Antydamp to all foundation wall exteriors, below grade. Use in consistency supplied by manufacturer.

Allow 24 hours to dry.

Second Coat—Apply a second coat of Sherwin-Williams Antydamp.

Allow 24 hours to dry before back-filling.

DAMPPROOFING OF FOUNDATIONS (Continued)

Note: Where particularly damp conditions prevail, due to hidden springs, swampy lands, etc., it is recommended that you write for instructions, addressing THE SHERWIN-WILLIAMS Co., Department of Architectural Service, 101 Prospect Avenue, N. W., Cleveland, Ohio.

Preservation of Buried Wooden Surfaces

Sherwin-Williams Carbolic-ol is a non-volatile oil obtained from coal-tar through distillation, and is as strong and permanent a preservative as can be produced. It can be applied by brush or dip method.

Specification No. 8—***First Coat***—All wood to be buried below ground shall be given one coat of Sherwin-Williams Carbolic-ol as supplied by manufacturer.

PAINTING AND STAINING OF EXTERIOR SURFACES

SWP (Sherwin-Williams Paint, Prepared) represents the best technical knowledge in the production of paint for general outside use. It is a combination of strictly pure carbonate of lead, sulphate of lead, zinc oxide, titanium pigment, pure linseed oil and turpentine, representing a *perfectly balanced* formula. Supplied in 32 colors and white. The advantages in its use are: greater covering capacity, greater hiding power, longer life, which result in greater economy.

Exterior Wood Surfaces (New)—Painted Finish

See Alternative Specification No. 10.

Specification No. 9—Before using SWP, surface shall be dry and free from dirt or grease. Do not paint in wet or frosty weather. Any pitchy spots in wood shall be coated with orange shellac after first coat has been applied.

First Coat—(For new soft woods such as cedar, white pine or redwood)—Apply SWP in color selected by architect mixed in following proportions: 1 gallon SWP, 7 pints pure linseed oil, 1 pint pure gum spirits of turpentine. Do not apply second coat until first is perfectly dry.

First Coat—(For new resinous woods such as yellow pine, cypress, etc.)—Apply SWP in color selected by architect mixed in following proportions: 1 gallon SWP, 2 quarts pure linseed oil, 1 quart pure gum spirits of turpentine.

Second Coat—Apply SWP, mixed in following proportions: 1 gallon SWP, 1 quart pure gum spirits of turpentine.

Third Coat—Apply SWP mixed in following proportions: 1 gallon SWP, 2 or 3 pints pure raw linseed oil.

Note: Where two-coat work must be done for economy's sake, omit second coat.

Exterior Wood Surfaces (New)—Painted Finish

Alternative to Specification No. 9.

Where architect wishes to leave mixing of paint for use on exterior surfaces to the discretion of painting contractor, it is recommended that Sherwin-Williams Zilo be specified, in preference to straight White Lead. Zilo contains a percentage of Zinc Oxide, which adds to whiteness, eliminates chalking, improves gloss, and spreading power of paint. The United States Government and majority of the States require a percentage of Zinc Oxide in their paints.

Specification No. 10—Sherwin-Williams will supply accurate specifications for the use of Zilo on particular jobs upon application.

White Lead

Specification No. 11—On all work requiring the use of White Lead alone, specify Sherwin-Williams Old Dutch Process White Lead, which is a strictly pure white lead (lead carbonate) ground in pure linseed oil.

Exterior Wood Surfaces (Old)—Painted Finish

Specification No. 12—Before applying first coat of paint, surface shall be clean. Old cracked paint shall be wirebrushed or scraped, and if condition of surface is very bad, burning off the old paint may be necessary. Knots and pitchy places shall be sealed with orange shellac.

Note: Due to greater oil content in certain of the darker shades of SWP, two sets of specifications are required. The following Specifications apply to Gloss White, and the following colors only: 496, 462, 387, 479, 357.

Repainting Outside Surfaces Where the Old Paint Is Chalking and Weathering, but Otherwise in Fair Condition but not Unusually Porous—*First Coat*—Apply SWP in the color selected by the architect, mixed in the following proportions: 1 gallon SWP, 1 pint pure raw linseed oil, 2 pints pure gum spirits of turpentine. Do not apply second coat before first is perfectly dry.

Second Coat—Apply SWP mixed in the following proportions: 1 gallon SWP, 1 quart pure raw linseed oil.

Repainting Where Old Paint Has Considerable Life, Such as Under Eaves, or Other Unexposed Surfaces—*First Coat*—Apply SWP in color selected by the architect mixed in following proportions: 1 gallon SWP, 3 pints pure gum spirits of turpentine.

Second Coat—Apply SWP mixed in the following proportions: 1 gallon SWP, 1 quart pure raw linseed oil.

Repainting Old Lumber Which Has Become Extremely Porous Through Exposure to the Weather for Years Without the Protection of Paint—*First Coat*—Apply SWP in color selected by the architect mixed in the following proportions: 1 gallon SWP, 7 pints pure raw linseed oil, 1 pint pure gum spirits of turpentine.

Second Coat—Apply SWP mixed in the following proportions: 1 gallon SWP, 2 to 3 pints pure raw linseed oil.

Note: The following Specifications apply to all other shades of SWP excepting those mentioned above:

Repainting Outside Surfaces Where the Old Paint Is Chalking and Weathering but Otherwise in Fair Condition and Not Unusually Porous—*First Coat*—Apply SWP in color selected by the architect mixed in the following proportions: 1 gallon SWP, ½ pint pure raw linseed oil and 1 pint pure gum spirits of turpentine.

Repainting Outside Surfaces Where Old Paint Has Considerable Life Such as Under Eaves or Other Unexposed Surfaces—*First Coat*—Apply SWP in color selected by the architect mixed in the following proportions: 1 gallon SWP, 1 to 1½ pints pure gum spirits of turpentine.

Repainting Old Lumber Which Has Become Extremely Porous Through Exposure to the Weather for Years Without the Protection of Paint—*First Coat*—Apply SWP in color selected by the architect mixed in the following proportions: 1 gallon SWP, 7 pints pure raw linseed oil, 1 pint pure gum spirits of turpentine.

Second Coat—Apply SWP mixed in following proportions: 1 gallon SWP, 1 pint to 1 quart pure raw linseed oil.

Wood Surfaces (New)—Stained Finish

(For Staining Shingles, see Specification No. 15).

Where the architect desires to stain and preserve exterior wood surfaces, without hiding grain, Sherwin-Williams Preservative Shingle Stains are recommended.

Specification No. 13—The surface to be stained shall be clean and dry.

First Coat—Apply Sherwin-Williams Preservative Shingle Stain in color selected by the architect, in consistency supplied by manufacturer. Allow to dry.

Second Coat—Repeat first coat.

Stucco, Concrete or Cement Walls—Painted Finish

The painting of stucco, concrete, or cement walls is advisable because of the protection afforded. A properly painted stucco surface does not water-spot. Sherwin-Williams Stucco and Concrete Paint dries with a semi-sheen which does not destroy the texture of a stucco surface, as does a gloss paint.

Specification No. 14—The surface shall be dry, and free from all dirt. Any salts or efflorescence on the surface shall be scraped off, and the surface washed with a solution of zinc sulphate (1½ to 2 pounds to the gallon of water) and allowed to dry thoroughly.

First Coat—Apply Sherwin-Williams Stucco and Concrete Paint in color selected by the architect thinned with Sherwin-Williams Stucco and Concrete Paint Reducer in the proportions of 2 quarts of reducer to a gallon of the paint. Allow at least 48 hours to dry.

Second Coat—Apply Sherwin-Williams Stucco and Concrete Paint in the consistency supplied by manufacturer.

SWP

SHERWIN-WILLIAMS PAINT PREPARED

Suitable Trimmers					Suitable Trimmers
Gloss White 353 363	Pearl Gray 479		Slate 363		360 Gloss White 357
Gloss White 363 360	Light Lead 353		Blue 369		For Porch Ceilings etc.
393 484 360	Cream 462		Silver Gray 357		Gloss White 363 486 353
461 486 393	Ivory 496		Cream Gray 360		363 Gloss White 393 496
Gloss White 461 486	Canary Yellow 387		Apple Green 460		461 Gloss White 496
461 Gloss White 393	Colonial Yellow 375		Willow Green 461		496 460 462
393 486 360	Golden Yellow 470		French Crown Green Med. 362		
375 387 393	Golden Brown 486		Bottle Green 484		Trim and Sash
375 387 462 360	Tobacco Brown 393		Red 367		357 353 496 Very durable for brick work

Please do not detach samples. Complete color cards sent upon request.

PAINTING AND STAINING OF EXTERIOR SURFACES (Continued)

Wooden Shingles (New)—Stained Finish

Sherwin-Williams Preservative Shingle Stains are recommended because of their light-fast color, and the fact that they contain a creosote oil, which preserves the surface on which applied.

Two coats are required: first a dip and second a brush coat.

Specification No. 15—***First Coat***—(Dip Coat—Dip the shingles two-thirds of their length in Sherwin-Williams Preservative Shingle Stain in color selected by the architect and throw into loose piles to dry.

Second Coat—(Brush Coat)—After the shingles have been laid, apply Sherwin-Williams Preservative Shingle Stain in consistency supplied by manufacturer.

Metal Roofs—Painted Finish

Here the architect has a choice between finishing with Metalastic (Specification No. 1) or with SWP (Specification No. 9). SWP affords a wide range of colors to harmonize with other parts of job. Metalastic is less expensive but is made in a more limited color range. Two coats are required, and if surface is galvanized, a priming coat is necessary, making three in all.

Specification No. 16—All rust, dirt and other foreign matter shall be cleaned from surface to be painted.

Prime Coat—(For galvanized iron only)—Apply Sherwin-Williams Galvanized Iron Primer in accordance with Specification No. 60.

First Coat—Apply Sherwin-Williams Metalastic in consistency supplied by manufacturer, or apply SWP mixed as follows: 1 gallon SWP, 3 pints pure spirits of turpentine. Allow to dry thoroughly before re-coating.

Second Coat—Apply Sherwin-Williams Metalastic in the consistency supplied by manufacturer, or apply SWP mixed as follows: 1 gallon SWP, 1 quart pure raw linseed oil.

Exterior Woodwork—Stained and Varnished Finish

Where exterior woodwork is to be stained and varnished, the use of Sherwin-Williams Oil Stain is recommended. This stain can be immediately covered with the varnish, omitting a sealing coat of shellac, which it is well to avoid on exterior work since it is not sufficiently elastic to withstand the expansion and contraction produced by temperature changes.

Specification No. 17—All woodwork shall be dry and clean. Mars or nailholes shall be treated so as to make them unnoticeable.

First Coat—Apply Sherwin-Williams Oil Stain in the shade selected by the architect. If a lighter shade than furnished is desired, wipe off with soft cloth before completely dry. Allow to dry thoroughly.

Note: Open grain woods require filling. For this purpose use Sherwin-Williams Paste Wood Filler, which is furnished in paste form, and must be reduced to brushing consistency with benzine. Apply to the wood, after first stain coat has dried, and when filler has partly set, wipe off across the grain with burlap. Later wipe clean with a soft cloth. Allow 24 hours to dry.

Second Coat—Apply Sherwin-Williams Rexpar Varnish, mixed as follows: 1 gallon Rexpar, 1 pint pure spirits of turpentine. Allow to dry thoroughly. Sand lightly with 00 sandpaper.

Third Coat—Apply Sherwin-Williams Rexpar Varnish in the consistency supplied by manufacturer. Allow to dry thoroughly. Sand lightly.

Fourth Coat—Apply Sherwin-Williams Rexpar Varnish in the consistency supplied by manufacturer. Leave with gloss finish, or, if dull finish is desired, specify "When dry, rub to a dull finish with pumice-stone and water."

Note: Sherwin-Williams Oil Stains, Rich Mahogany and Brown Mahogany, require the use of shellac sealer and are not recommended for exterior use. Where Acid or Handcraft Stains are specified, a thin coat of shellac shall be applied in place of the first coat of Sherwin-Williams Rexpar Varnish.

Porch Floors and Canvas Decks (New)—Painted Finish

Sherwin-Williams Porch and Deck Paint is manufactured for this particular purpose. Drying with a tough, hard and elastic film, it is ideal for the rough wear that such surfaces must sustain, due to weather, and scuffing of feet.

Specification No. 18—Surface to be painted shall be clean and dry.

First Coat—Apply Sherwin-Williams Porch and Deck Paint in color selected by the architect, mixed as follows: 1 gallon Porch and Deck Paint, 1 quart pure spirits of turpentine.

Second Coat—Apply Sherwin-Williams Porch and Deck Paint in the consistency supplied by manufacturer.

Third Coat—Repeat second coat.

Note: If an old porch is to be repainted, the second coat may be omitted. If in exceptionally good condition, the first two coats may be omitted.

Porch Ceilings—Natural Varnish Finish

A spar varnish is recommended for all exterior surfaces to be varnished, due to the large proportion of oils it contains which results in greater elasticity.

Specification No. 19—Surface to be finished shall be clean and dry.

First Coat—Apply Sherwin-Williams Rexpar Varnish thinned as follows: 1 gallon Rexpar, 1 pint pure spirits of turpentine. Allow 48 hours to dry. Sand lightly.

Second Coat—Apply Rexpar in consistency supplied by manufacturer. Allow 48 hours to dry. Sand lightly.

Third Coat—Apply Rexpar as supplied by manufacturer.

New Wood and Metal Surfaces—Enamel Finish

For an exterior enamel finish, the recommendation is unreservedly Sherwin-Williams Old Dutch Enamel. This is a full oil enamel, containing a large percentage of specially treated oil, which adds to its life. Leading railroads have used Old Dutch for their coaches for years because of its durability.

Specification No. 20—Surface to be finished shall be clean and dry. If galvanized, it shall be coated with Sherwin-Williams Galvanized Iron Primer (see Specification No. 60). Pitchy spots on wood shall be sealed with pure orange shellac.

First Coat—Apply SWP Flat White, reduced in the proportion of 1 pint of raw linseed oil and 1 pint of pure spirits of turpentine to the gallon of paint. Allow to dry thoroughly.

Second Coat—Apply SWP Flat White just as it comes in the can.

Third Coat—Apply Sherwin-Williams Old Dutch Enamel and SWP Flat White mixed in equal parts.

Fourth Coat—Apply Sherwin-Williams Old Dutch Enamel in the consistency supplied by manufacturer.

FINISHING OF INTERIOR FLOORS

Floors get particularly severe wear. Therefore it is essential that the proper type of finish be applied in the right way, in order to insure satisfaction.

Preparation of the Surface—Whether the surface be wood or cement, it should be thoroughly clean and dry. A wood floor should be scraped, and swept clean, and it is well to wipe up the dust with a soft cloth dampened with gasoline. All spots should be removed.

Priming Coat—Under no conditions should a liquid filler or shellac be applied as a first coater on a wood floor that is to be varnished. A chain is no stronger than its weakest link, and the use of a liquid filler or shellac prevents the varnish from penetrating into the wood, and thus adhering tightly to surface. If a filler is necessary, a paste filler should be used.

Staining and Filling Floors—The three woods most generally used in the United States for floors are oak and maple for hardwood floors, and edge-grain pine for soft-wood floors. Pine and maple are both close-grain woods, and require no filler. Oak is an open-grain wood, and must be filled. In such cases use Sherwin-Williams Paste Filler, and thin it with benzine to con-

SHERWIN-WILLIAMS STUCCO AND CONCRETE PAINT


Coral Tint


Cream


Tan


Cream Gray


Canary Yellow


Sea Green


Terra Cotta


Gray

Also White

Complete color cards furnished upon request.

FINISHING OF INTERIOR FLOORS (Continued)

sistency of thick cream. Brush it over surface, and allow to become partly dry; then wipe off *across* grain with burlap or excelsior; this forces filler into the pores; wipe clean with a soft cloth. It will be found that Sherwin-Williams Paste Wood Filler, Dark, has enough pigment to somewhat darken an oak floor, if that is desired. In staining maple or pine, specify Sherwin-Williams Oil Stains, as they require no shellac sealer, except for the two shades, Rich Mahogany and Brown Mahogany. In cases where these shades are used, such as on stair treads, a thin coat of pure white shellac, reduced with an equal quantity of denatured alcohol, should be applied after stain has dried, before applying any varnish coats.

Finishing Floors—Sherwin-Williams Mar-not Fast-Dri Varnish is unreservedly recommended for floors. Its tough, hard film adheres well, resists moisture and hard wear, and looks well longer than other materials on the market.

New Hardwood Floors—Natural Varnished Finish

Specification No. 21—The floor shall be clean and dry, and all spots shall be removed.

First Coat—Apply Sherwin-Williams Mar-not Fast-Dri Varnish, thinned in the proportion of 1 pint of pure gum spirits of turpentine to 1 gallon of varnish. Allow to dry. Sand lightly with 00 sandpaper.

Note: If open-grain wood, before first coat apply Sherwin-Williams Transparent Paste Wood Filler, thinned with benzine. Wipe *across* grain when partially dry. Allow to dry 24 hours.

Second Coat—Apply Sherwin-Williams Mar-not Fast-Dri Varnish in consistency supplied by manufacturer. Allow to dry. Sand lightly.

Third Coat—Apply Sherwin-Williams Mar-not Fast-Dri Varnish in consistency supplied by manufacturer.

Note: If dull finish is desired, two methods are possible: (1) Add to specification the following words: "When dry, rub to a dull finish with pumice-stone and water." (2) Substitute for the third coat the following: "Apply Sherwin-Williams Mar-not Fast-Dri Varnish Satin Finish.

For Lacquer Specification, apply direct to THE SHERWIN-WILLIAMS CO.

New Hardwood Floors—Open-Grain Wood—Stained and Varnished Finish

Specification No. 22—The floor shall be absolutely smooth, clean, and dry.

First Coat—Apply Sherwin-Williams Paste Wood Filler, thinned with benzine, in the color selected by the architect. (Extra dark effects require special specifications which Sherwin-Williams will furnish upon application.) Allow to dry partially, and wipe off *across* grain with burlap or excelsior. Allow 24 hours to dry.

Second Coat—Apply Mar-not Fast-Dri Varnish, thinned in the following proportions: 1 pint of pure gum spirits of turpentine to 1 gallon of varnish. When dry, sand lightly with 00 sandpaper.

Third Coat—Apply Mar-not Fast-Dri Varnish in consistency supplied by manufacturer. When dry, sand lightly with 00 sandpaper.

Fourth Coat—Apply Mar-not Fast-Dri Varnish in consistency supplied by manufacturer.

Note: For dull finish, see note at end of Specification No. 21.

For Lacquer Specification, apply direct to THE SHERWIN-WILLIAMS CO.

New Hardwood Floors—Close-Grain Wood—Stained and Varnished Finish

Specification No. 23—The floor shall be absolutely smooth, clean, and dry.

First Coat—Apply Sherwin-Williams Oil Stain in the color selected by the architect. Allow to dry for 24 hours.

Note: For extra dark effects, apply for special directions to THE SHERWIN-WILLIAMS CO. If Rich Mahogany or Brown Mahogany are used, when dry, apply a thin coat of pure white shellac, thinned with an equal quantity of denatured alcohol.

Second Coat—Same as Specification No. 22.

Third Coat—Same as Specification No. 22.

Fourth Coat—Same as Specification No. 22.

Note: For Lacquer Specification, apply direct to THE SHERWIN-WILLIAMS CO.

New Hardwood Floors—Natural Waxed Finish

Specification No. 24—The floor shall be absolutely smooth, clean, and dry.

First Coat—If of open grain wood, apply Sherwin-Williams Transparent Paste Wood Filler as specified in Specification No. 22. If close grain wood is used, omit this operation.

Second Coat—Apply Sherwin-Williams Floor-Seal. Allow to dry and sand lightly with 00 sandpaper.

Third Coat—Apply Sherwin-Williams Prepared Wax, and polish with weighted brush or polishing machine.

Fourth Coat—Repeat third coat.

New Hardwood Floors—Open-Grain Wood—Stained and Waxed Finish

Specification No. 25—The floor shall be absolutely smooth, clean, and dry.

FINISHING OF INTERIOR FLOORS (Continued)

First Coat—Apply Sherwin-Williams Paste Wood Filler in color selected by the architect, thinned with benzine. When partially dry, wipe off *across* the grain with burlap. Allow to dry 24 hours.

Note: For extra dark effects, apply for special instructions to THE SHERWIN-WILLIAMS CO.

Second Coat—Same as Specification No. 24.
Third Coat—Same as Specification No. 24.
Fourth Coat—Same as Specification No. 24.

New Hardwood Floors—Close-Grain Wood—Stained and Waxed Finish

Specification No. 26—The floor shall be absolutely smooth, clean, and dry.
First Coat—Same as Specification No. 23.
Second Coat—Same as Specification No. 24.
Third Coat—Same as Specification No. 24.
Fourth Coat—Same as Specification No. 24.

New Softwood Floors—Stained and Varnished Finish

Specification No. 27—The floor shall be absolutely smooth, clean, and dry.

First Coat—Apply Sherwin-Williams Flo-lac in shade selected by architect, thinned in the proportion of 1 pint of pure gum spirits of turpentine to 1 gallon of Flo-lac.

Note: If a deeper tone is desired, repeat this coat.

Second Coat—Apply Mar-not Fast-Dri Varnish in consistency supplied by manufacturer. Allow to dry, and sand lightly with 00 sandpaper.

Third Coat—Apply Mar-not Fast-Dri Varnish in consistency supplied by manufacturer.

For Lacquer Specification, apply direct to THE SHERWIN-WILLIAMS CO.

New Softwood Floors—Painted Finish

Specification No. 28—The floor shall be absolutely smooth, clean, and dry.

First Coat—Apply Sherwin-Williams Floor Enamel in color selected by architect, thinned in the proportion of 1 pint of pure gum spirits of turpentine to 1 gallon of Floor Enamel. Allow to dry thoroughly.

Second Coat—Apply Sherwin-Williams Floor Enamel in consistency supplied by manufacturer.

Third Coat—Repeat second coat.

For Lacquer Specification, apply direct to THE SHERWIN-WILLIAMS CO.

New Cement Floors—Painted Finish

Specification No. 29—The floor shall be properly drained, be free from alkali, dust, dirt, and other foreign matter, and absolutely dry.

First Coat—Apply Sherwin-Williams Floor Enamel thinned as follows: 1½ pints pure raw linseed oil, 1 pint pure gum spirits of turpentine, 1 gallon Floor Enamel.

Second Coat—Apply Sherwin-Williams Floor Enamel in consistency supplied by manufacturer.

Third Coat—Repeat second coat.

Note: Where strictest economy is necessary, third coat may be omitted, but three coats will wear better and are recommended.

New Cement Floors—to Harden and Seal

Sherwin-Williams Concrete and Cement Hardner will materially harden a cement floor and render it dustproof and non-porous. One gallon will treat from 60 to 100 square feet, three applications. It is colorless, and will not change the shade of the floor.

Specification No. 30—Floor shall be clean and dry.

First Coat—Apply Sherwin-Williams Concrete and Cement Hardner, reduced in the proportion of one part of Hardner to two parts of water.

Second Coat—Apply Concrete and Cement Hardner reduced in the proportion of equal parts of Hardner and water.

Third Coat—Apply Concrete and Cement Hardner reduced in proportion of two parts Hardner to one part water.

Note: Apply by flushing on the surface, and brushing out. Surfaces to be painted shall be thoroughly cleaned of all excess of Hardner and allowed to dry thoroughly.

Finishing of School Room and Gymnasium Floors, and Other Floors Subjected to Especially Hard Wear

The floors of school rooms, department stores, gymnasiums, etc., receive such hard wear that it is frequently poor economy to give them a "surface" finish, such as that resulting from a varnish or a paint film. Sherwin-Williams Floor-Seal has been developed to meet this need—a real wood floor hardner, making the surface resistant to wear. Unlike boiled linseed oil, it does not collect dust or dirt, and does not discolor the floor.

Specification No. 31—Surface to be treated shall be clean and dry.

First Coat—Apply Sherwin-Williams Floor-Seal in consistency supplied by manufacturer.

Finishing of Ballroom Floors

This problem presents special difficulties, because the surface must be very smooth, must wear well, and be very elastic.

Specification No. 32—The floor shall be absolutely smooth, clean, and dry.

First Coat—Apply Sherwin-Williams Floor-Seal liberally with a brush. When dry, sand lightly with 00 sandpaper.

Second Coat—Apply Sherwin-Williams Prepared Paste Wax, and rub to a hard, polished surface with a weighted brush or polishing machine.

Third Coat—Repeat second coat.

Note: Before dancing, a small quantity of Sherwin-Williams Dancing Floor Wax (Powdered) may be sprinkled on the floor.

Hardwood Floors (Old) to Re-varnish

This specification is intended for floors where the finish only needs attention, but where the floor itself is in good condition. (If the floor itself is badly marred, it should be scraped and cleaned, after which follow recommendations for finishing a new floor.)

Specification No. 33—The floor shall be sandpapered smooth, to remove gloss of old finish. Then it shall be washed with Sherwin-Williams Flaxoap, rinsed thoroughly and allowed to dry. Stains and spots shall be removed with a solution of oxalic acid.

Note: If floor is too stained to permit of a clear varnish finish, the use of Sherwin-Williams Flo-lac Varnish Stain is recommended.

First Coat—Apply Sherwin-Williams Mar-not Fast-Dri Varnish, thinned in the proportion of 1 pint of pure gum spirits of turpentine to 1 gallon of varnish. Allow to dry and sand lightly with 00 sandpaper.

Second Coat—Apply Mar-not Fast-Dri Varnish in consistency supplied by manufacturer.

Note: If old finish is in such bad condition that sanding does not smooth it out, and if floor itself is still in good shape, it is wise to remove the old finish entirely by using Sherwin-Williams Taxite. Then clean the floor with a cloth soaked in benzine, and allow to dry. Proceed then with first coat.

Discolored Hardwood and Softwood Floors—Grained, Stained, and Varnished Finish

Specification No. 34—The floor shall be thoroughly scrubbed with Sherwin-Williams Flaxoap (a 100% pure linseed oil soap) and water, and allowed to dry thoroughly.

First Coat—Apply Sherwin-Williams Flo-lac Ground Color. Allow to dry.

Second Coat—Grain the floor with Sherwin-Williams Graining Preparation, using also a steel graining comb, or old whisk broom or cloth, depending upon texture desired. Allow to dry.

Third Coat—Apply Sherwin-Williams Flo-lac Varnish Stain in consistency supplied by manufacturer. Allow to dry, and sand lightly.

Note: If a darker shade is desired, repeat this operation.

Fourth Coat—Apply Sherwin-Williams Mar-not Fast-Dri Varnish in the consistency supplied by manufacturer.

Old Floors—Painted Finish

Specification No. 35—The surface shall be washed with Sherwin-Williams Flaxoap and water, and allowed to dry thoroughly.

First Coat—Apply Sherwin-Williams Floor Enamel, thinned in the proportion of 1 pint of pure gum spirits of turpentine to 1 gallon of paint.

Second Coat—Apply Sherwin-Williams Floor Enamel in consistency supplied by manufacturer.

SHERWIN-WILLIAMS STAINS



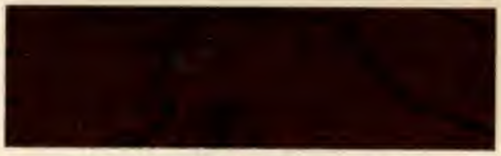
Walnut Handcraft Stain
On Birch (White)



Walnut Handcraft Stain
On Douglas Fir



Nut Brown Handcraft Stain
(Formerly Brown Oak)
On White Quartered Oak



Extra Dark Mahogany Handcraft Stain
On Gumwood



Dark Oil Stain (For New Wood)



Walnut Oil Stain (For New Wood)

Complete color cards furnished upon request.

PAINTING AND DECORATING OF INTERIOR WALLS

THE SHERWIN-WILLIAMS CO. has developed a complete line of interior wall finishes, to meet all requirements for gloss, semi-gloss, or flat finishes, textured or otherwise, on plaster, composition or wooden walls, as well as concrete or brick. If there are special requirements not mentioned in the following specifications, apply direct to THE SHERWIN-WILLIAMS CO., Department of Architectural Service, Cleveland, Ohio.

Smooth, Sand Finish and Textured Plasters, Composition Board, Canvas Covered Walls—Washable Flat Finish

Specification No. 36—The surface to be finished shall be clean and dry.

First Coat—Apply Sherwin-Williams Wall Primer and Sealer as recommended in Specification No. 40. Allow to dry at least 24 hours.

Second Coat—Apply Sherwin-Williams Flat Tone in consistency supplied by manufacturer.

Note: If a third coat is to be used, the addition of two quarts of Wall Primer and Sealer to the gallon of Flat Tone for second coat will present a tighter and more improved surface on which to apply third coat. In the interests of economy, two coats may be sufficient.

Specification—*Repainting*—Remove all soot, grease, dirt, or loose paint. Apply Sherwin-Williams Wall Primer and Sealer to the bare patches. Allow to dry. Then apply Sherwin-Williams Flat Tone as supplied by manufacturer.

Smooth, Sand Finish and Textured Plasters, Composition Board, Canvas Covered Walls—Semi-Lustre Finish

Sherwin-Williams Semi-Lustre has a soft, mellow lustre, and is recommended for those surfaces where a more durable and washable finish is desired than possible with a flat wall paint, but where a high gloss is not desired.

Specification No. 36Y—The surface to be finished shall be clean and dry.

First Coat—Apply Sherwin-Williams Wall Primer and Sealer as recommended in Specification No. 40. Allow to dry at least 24 hours.

Second Coat—Apply Sherwin-Williams Semi-Lustre in the consistency supplied by manufacturer.

Note: If a third coat is to be used, repeat the operation.

Specification—*Repainting*—Remove all soot, grease, dirt, or loose paint. If surface is porous, apply a coat of Wall Primer and Sealer. If not, apply Wall Primer and Sealer to bare spots. Allow to dry. Then apply Semi-Lustre in the consistency supplied by manufacturer.

New Walls—Rough or Smooth Plaster, Canvas Covered Walls, or Plaster Board—Flat-Tone Multi-Color Effects

The use of Multi-Color Effects allows the decorator an endless variety of color and texture effects, by use of a sponge stipple.

For samples of various effects, and specific instructions, apply direct to THE SHERWIN-WILLIAMS CO.

Specification No. 37—Proceed with finishing the wall, as recommended in Specification No. 36, using, as second coat, the foundation color desired for effect to be produced.

First Stipple Coat—When the foundation coat is dry, apply a stipple coat of Flat Tone in color selected by the architect, in consistency supplied by manufacturer, using the flat surface of a sponge, and tapping the sponge directly on the surface, being careful not to twist or turn it.

Second Stipple Coat—Repeat this process with another color if a two-color stipple is desired. It is not necessary for first stipple coat to dry before second is applied.

New Walls (Glazed or "Tiffany" Effects)—Rough or Smooth Plaster, Canvas Covered Walls, or Wall Board —Flat-Tone System Finish

Flat-Tone System allows for glaze effects over a foundation of either Flat-Tone or Semi-Lustre, or Heavy Body Wall Paint No. 96, as mentioned in Specification No. 41.

Specification No. 38—Proceed with finishing the wall as recommended in Specification No. 36 (Flat-Tone), Specifica-

PAINTING AND DECORATING OF INTERIOR WALLS (Continued)

tion No. 36Y (Semi-Lustre), or Specification No. 41 (No. 96 Heavy Body Wall Paint), using as second coat the foundation color desired.

First Glaze Operation—Coat a portion of wall with Sherwin-Williams Flat-Tone Glazing Liquid, tinted to color selected by architect.

Second Glaze Operation—Stipple this with a crumpled cloth, twisting the cloth after it is applied to the wall. Shade it lighter towards the top.

Note: For samples of glaze effects, and for specific instructions, apply to THE SHERWIN-WILLIAMS CO.

Wall Primer and Sealer

Sherwin-Williams Wall Primer and Sealer is a penetrating wall sealer, which is effective in stopping suction on all new wall surfaces, or ones that are porous. It contains a percentage of pigment which gives it a certain covering capacity, and is therefore recommended for two-coat wall work.

Specification No. 40—Wall to be finished shall be clean and dry.

First Coat—Apply Sherwin-Williams Wall Primer and Sealer in the consistency supplied by the manufacturer.

Note: If surface is sized muslin, Sanitas, primed metal, or a hard and tight putty-coat plaster, add an equal part of either Sherwin-Williams Flat-Tone, Semi-Lustre, or No. 96 Wall Paint to first coat.

Second Coat—After the first coat has dried at least 24 hours, it shall be inspected, and if any flat streaks appear, as result of incomplete sealing, they shall be coated with Sherwin-Williams Wall Primer and Sealer.

Special Note: Painting Newly Plastered Surfaces: THE SHERWIN-WILLIAMS CO. never advocates painting plastered walls which have not been given an opportunity to dry out thoroughly. If "green" plastered walls are painted, there is always danger. However, there are certain occasions where walls which have not been given sufficient time to dry out thoroughly must be painted for commercial reasons; apply one coat Wall Primer and Sealer. Where indications point to presence of alkali (hot spots), we recommend washing surface with a solution of 1½ to 2 pounds of zinc sulphate in a gallon of water.

This should be brushed on surface and sufficient time should then be allowed for drying before first coat of Sherwin-Williams Wall Primer and Sealer is applied. We, of course, do not guarantee that this procedure will prevent dissolving of finish nor that it will not peel. This danger is always present when "green" plaster must be painted.

Wall Paint No. 96 (Heavy Body)

This is a flat finish paint with added pigment to make it extremely heavy-bodied. Can be used to produce textured effects, pebbled, brush stipple, etc. Covers and hides well.

Specification No. 41—Surface to be finished shall be clean and dry.

First Coat—Apply Sherwin-Williams Wall Primer and Sealer as recommended in Specification No. 40.

Second Coat—Apply Sherwin-Williams No. 96 Wall Paint as supplied by manufacturer, stippled or textured.

Note: For specifications for special effects, apply direct to THE SHERWIN-WILLIAMS CO.

Enamelastic Finish for Walls

Sherwin-Williams Enamelastic is a full oil enamel, exceptionally easy-working, with high covering and staying qualities.

Specification No. 42—Wall to be finished shall be clean and dry.

First Coat—Apply Sherwin-Williams Wall Primer and Sealer as in Specification No. 40.

Second Coat—Apply Sherwin-Williams XXX Undercoater reduced with 1 pint pure turpentine and 1 quart Enamelastic to the gallon of Undercoater.

Third Coat—Apply Sherwin-Williams Enamelastic (Gloss or Satin Finish) reduced with ¼ pint pure turpentine to the gallon of Enamelastic.

Note: For two-coat work, if desired in the interests of economy, omit the second coat. Three-coat work is recommended wherever possible.

Old Dutch Enamel Finish

Recommended for the very finest, highest grade enamel finish possible.

Specification No. 43—Follow Specification No. 42, substituting Old Dutch Enamel for Enamelastic. For four-coat specification, apply to THE SHERWIN-WILLIAMS CO.

New Walls—XXX Enamel Undercoater

An enamel undercoater with remarkable covering capacity, which in addition seals the surface tight.

Specification No. 44—Follow Specification No. 42.

Keene's Cement—Enamel Finish

Specification No. 45—Follow Specification No. 42 or No. 43. *For Lacquer Specification, apply direct to* THE SHERWIN-WILLIAMS CO.

Interior Brick, Tile, or Concrete Walls—Painted Dull Finish

Specification No. 46—Follow Specification No. 36, No. 41 or No. 42.

Save-Lite for Mill Walls

Save-Lite is furnished in three types: Gloss, Eg-Shell, and Flat. The Eg-Shell is the standard recommendation, although certain conditions require a gloss finish while certain damp conditions require a flat finish, where the porosity allows dampness to come through without cracking the finish.

Specification No. 47—Walls shall be clean and dry.

First Coat—Apply Sherwin-Williams Wall Primer and Sealer as in Specification No. 40.

Second Coat—(Brushing) Apply Sherwin-Williams Save-Lite in the consistency supplied by manufacturer. (If reduction is necessary, add a slight amount of S-W Save-Lite Reducer No. 74.)

Third Coat—(Brushing) Apply Save-Lite in consistency supplied by manufacturer.

Note: If spray application is to be used, one coat will probably be sufficient. For spraying, thin the Save-Lite with Save-Lite Reducer No. 74 in the proportion from 1 pint to 1 quart of Reducer to the gallon of Save-Lite.

Interior Walls and Ceilings—Save-Lite Fume Resisting White Finish

A special material which resists action of sulphur and other acid fumes without turning color badly. Furnished in same three degrees of gloss as Sherwin-Williams Save-Lite, mentioned in Specification No. 47.

Specification No. 48—Follow Specification No. 47, except that instead of using S-W Save-Lite, specify Sherwin-Williams Save-Lite Fume-Resisting White, Flat, [Semi-Gloss] [Gloss].

New Plaster Walls—Water Paint Finish

Specification No. 49—Wall shall be clean and dry.

First Coat—Apply Sherwin-Williams Wall Primer and Sealer as in Specification No. 40.

Second Coat—Apply Sherwin-Williams Decotint, in shade selected by architect. Mix with water according to the directions on the package.

Walls Previously Finished With an Oil Paint—Washable Flat Painted Finish

Specification No. 50—All cracks or holes must be patched with plaster or plaster of Paris, and sanded smooth. All dirt and grease shall be removed and wall shall be clean and dry. Then follow re-paint directions in Specification No. 36, or Specification No. 41.

Dampproofing Interior Walls Above Grade (Plaster Bond)

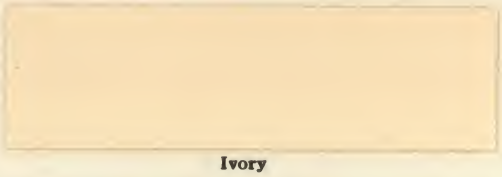
This is a specially prepared paint of the asphalt type, made for application *without heat* on inside brick, tile, or concrete walls above grade, to dampproof the surface. Its use obviates the necessity of furring and lathing. The material should not be used for ceilings or coves; it is designed for perpendicular walls only.

Specification No. 51—Wall to be treated shall be free from frost, clean and dry.

First Coat—Apply Sherwin-Williams Plaster Bond in the consistency supplied by manufacturer. Allow to dry 24 hours, when the surface will be in a tacky condition.

Second Coat—Those parts of surface on which pin holes or voids have appeared shall be "spotted" with a second coat. Allow to dry 24 hours before plastering wall.

SHERWIN-WILLIAMS FLAT-TONE



Ivory



Caen Stone



Pale Green



Ivory Tan



Silver Gray



Sky Blue



Olive Tan



Buff

SHERWIN-WILLIAMS SEMI-LUSTRE



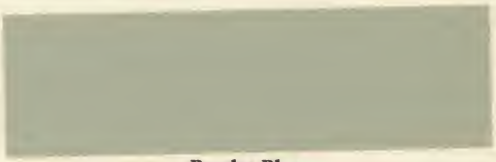
Canary Yellow



Ivory White



Cream Gray



Poudre Blue



Buff



Taupe (New)



Pale Green



Bright Sage

Please do not detach color samples. Color cards sent upon request.

FINISHING OF INTERIOR WOOD TRIM

The decorative value of properly finished woodwork is important. So many effects are possible, and so many materials may be used, that the following specifications have been designed to give the best information in the simplest manner. Any special problems should be referred to THE SHERWIN-WILLIAMS CO.

In order to differentiate readily between open-grain and close-grain woods, so that architects may know which of these woods require paste wood filler in the finishing process and which do not, a list of the better known American building woods under each type is given hereunder:

Open-Grain Woods

Ash	Chestnut	Mahogany	Rosewood
Butternut	Elm	Oak	Walnut
		Hickory	

Close-Grain Woods

Basswood	*Cherry	Hemlock	Redwood
Beech	Cypress	Maple	Spruce
*Birch	Fir	Pine	Sycamore
Cedar	Gumwood	Poplar	Whitewood

*Will take a paste filler where desired to emphasize the grain.

Stains—THE SHERWIN-WILLIAMS CO. manufactures three types of stains—Oil Stains, Handcraft Stains (Spirit Penetrating), and Acid Stains. Oil Stains are recommended for all exterior work and floors. Handcraft Stains should be used for all other purposes. Acid Stains are made only in certain mahogany shades and are recommended where special depth of color is required. For recommendations for Acid Stains, apply to THE SHERWIN-WILLIAMS CO.

New Interior Open-Grain Woodwork—Stained and Varnished Finish

Specification No. 52—All woodwork shall be smooth, clean, and dry. Nailholes, cuts, cracks, etc., shall be treated so as to be unnoticeable.

First Coat—Apply Sherwin-Williams Stain in shade selected by architect.

Second Coat—Apply Sherwin-Williams Paste Wood Filler, in shade selected by architect, and wipe off *across* the grain with burlap or excelsior before the filler has dried. Allow to dry 24 hours.

Third Coat—Apply thin coat of pure white shellac (or Sherwin-Williams Marvelac), and when dry, sand lightly.

Fourth Coat—Apply Sherwin-Williams Scar-not Varnish in consistency supplied by manufacturer. Sand lightly.

Fifth Coat—Repeat fourth coat.

Note: If dull finish is desired, (1) Rub when dry to dull finish with pumice-stone and water; or (2) Substitute for last coat Sherwin-Williams Velvet Finish Varnish, No. 1044.

New Interior Close-Grain Woodwork—Stained and Varnished Finish

Specification No. 53—Follow Specification No. 52, except that the second coat (Paste Filler) may be omitted.

New Interior Open-Grain Woodwork—Natural Varnish Finish

Specification No. 54—Surface shall be smooth, clean, and dry. Nailholes, cuts, cracks, etc., shall be treated so as to be unnoticeable.

First Coat—Apply Sherwin-Williams Transparent Paste Filler, and wipe off *across* the grain before dry. Allow to dry 48 hours.

Second Coat—Apply Sherwin-Williams Scar-not Varnish, thinned with 1 pint of pure turpentine to 1 gallon of varnish. Allow to dry and sand lightly.

Third Coat—Apply Sherwin-Williams Scar-not Varnish, supplied by manufacturer. Sand lightly when dry.

Fourth Coat—Apply Sherwin-Williams Scar-not Varnish in consistency supplied by manufacturer.

Note: If dull finish is desired, follow recommendations given in special note following Specification No. 52.

New Interior Close-Grain Woodwork—Natural Varnish Finish

Specification No. 55—Follow Specification No. 54, except that the first coat (Transparent Paste Filler) may be omitted.

New Interior Open-Grain Woodwork—Stained and Waxed Finish

Specification No. 56—Follow Specification No. 52, except that in place of Fourth and Fifth Coats, substitute the following:

Fourth Coat—Apply Sherwin-Williams Prepared Wax, wiping off the surplus, and bringing surface to a polish by hard, brisk rubbing.

Fifth Coat—Repeat fourth coat.

New Interior Close-Grain Woodwork—Stained and Waxed Finish

Specification No. 57—Follow Specification No. 56, except that the second coat (Paste Filler) may be omitted.

Interior Wood Trim—Old Dutch Enamel

Specification No. 58—Follow Specification No. 59, substituting Old Dutch Enamel for Enamelastic. For special five-coat specification, refer to THE SHERWIN-WILLIAMS CO.

Interior Wood Trim—Enamelastic Finish

Specification No. 59—Surface to be finished shall be free from dirt, grease, dust, and be absolutely smooth and dry.

First Coat—Apply Sherwin-Williams XXX Undercoater, reduced with 1 quart pure linseed oil and ½ pint pure turpentine to the gallon of undercoater. Allow to dry thoroughly and sand lightly.

Note: On hardwoods, reduce with 1 pint each linseed oil and turpentine to the gallon of undercoater.

Second Coat—Apply Sherwin-Williams XXX Enamel Undercoater, reduced with 1 pint of pure turpentine to the gallon.

Note: Where greatest economy is necessary, this coat may be omitted.

Third Coat—Apply Sherwin-Williams Enamelastic and Sherwin-Williams XXX Enamel Undercoater, mixed in equal parts. Reduce each gallon of the mixture with 1 pint of pure turpentine. Allow to dry and sand very lightly with 0000 sandpaper.

Fourth Coat—Apply Sherwin-Williams Enamelastic, Gloss or Satin Finish, in consistency supplied by manufacturer.

Specification—*Repainting*—Wash with Sherwin-Williams Flaxoap and water so that surface is thoroughly clean. Allow to dry, and sand lightly. Then start with third coat, as specified above, and continue to end of specification.

Note: If surface is in bad condition, loose paint should be scraped off and bare spots "spotted" with Sherwin-Williams XXX Enamel Undercoater, thinned with 1 quart of pure linseed oil and ½ pint of pure turpentine to the gallon of undercoater.

MISCELLANEOUS SPECIFICATIONS

Galvanized Iron Surfaces—Primed and Painted Finish

Palm Oil used in galvanizing metal many times affects paint applied to surface, causing it to peel and flake off. Galvanized Iron Primer, as manufactured by THE SHERWIN-WILLIAMS CO., overcomes this difficulty.

Specification No. 60—The galvanized iron surface to be finished shall be clean and free from dirt, rust, grease, acid, rosin, etc.

Note: The best way to clean finish is to wash it thoroughly with a copper acetate solution consisting of about six ounces of copper acetate to 1 gallon of water. Surface must be dry before applying paint.

First Coat—(Priming Coat) Apply Sherwin-Williams Galvanized Iron Primer in consistency supplied by manufacturer.

Second Coat—The surface may now be painted with a regular lead and oil paint, a zinc paint, flat wall, or enamel finish, following regular directions for same.

Note: See Specification No. 6.

Radiators—Painted Finish

Tests made by the American Society of Heating and Ventilating Engineers show that paints containing bronze powders reduce the radiation of heat from radiators

MISCELLANEOUS SPECIFICATIONS (Continued)

about 25%. On the other hand, paints made from zinc oxide or lithopone do not appreciably affect radiation.

Specification No. 61—Before painting, remove all dust and dirt from radiators by wire brushing. Remove any grease. Painting shall not be done when radiators are hot. Allow paint to dry before turning on heat. Be sure surface is completely dry before painting.

First Coat—Apply Sherwin-Williams Metal Primer Gray, No. 76. Allow to dry.

Second and Third Coats—

(1) For a white finish, specify two coats of Sherwin-Williams Enameloid White.

(2) For a colored finish, specify two coats of Sherwin-Williams Enameloid in the color selected.

(3) For a flat finish, specify two coats of Sherwin-Williams Flat Tone in the color selected.

Note: Where Enameloid is used, it is recommended that it be thinned slightly with pure turpentine.

Metal Trim (Finished on the Job)—Enameled Finish

Specification No. 62—All metal trim to be finished on the job shall have received a coat of Sherwin-Williams Metal Trim Primer before leaving the shop. When installed, it shall be cleaned from dust, dirt, grease, etc., and sanded lightly with 00 sandpaper.

First Coat—Apply Sherwin-Williams Enameloid in color selected by architect, and in consistency supplied by manufacturer. Sand lightly when dry.

Second Coat—Apply Sherwin-Williams Enameloid in consistency supplied by manufacturer.

Factories (F), Offices (O), Stores (S) and Warehouses (W)

ALBANY, N. Y., (W), Colonie & Montgomery Sts., 3rd Floor
(S), 480 Broadway Arcade
(S), 324 Central Avenue
ALTOONA, PA., (S), 1015-17 Green Street
AMARILLO, TEX., (S), Cor. 9th & Polk Streets
ASHTABULA, OHIO, (S), 4720 Main Street
ATLANTA, GA., (S), 233 Peachtree Street, N. E.
AUSTIN, TEX., (S), 817 Congress Avenue
BALTIMORE, MD., (W), Pratt & Green Streets
(S), 8 W. Fayette Street
BANGOR, ME., (W), 75-85 French Street
BATON ROUGE, LA., (S), 149 Third Street
BEAUMONT, TEX., (S), 356 Fannin Street
BINGHAMTON, N. Y., (S), 162 Washington Street
BIRMINGHAM, ALA., (S), 2016 Third Ave., No.
BOSTON, MASS., (O) & (W), 19-23 Pittsburgh Street
E. BOSTON, MASS., (F), 266 Border Street
BOUNDBROOK, N. J., (F)
BRIDGEPORT, CONN., (S), 86 Cannon Street
BROWNSVILLE, TEX., (S), 1240 Elizabeth Street
BUFFALO, N. Y., (O) & (W), 37 Pearl Street
CANTON, OHIO, (S), 422-24 Tuscarawas Avenue, W.
CEDAR RAPIDS, IOWA, (S), 216 Third Avenue, East
CHARLESTON, S. C., (W), 267 E. Bay Street
CHARLOTTE, N. C., (S), 424 So. Tryon Street
(W), 212 W. First Street
CHATTANOOGA, Tenn., (S), 826-828 Broad Street
CHICAGO, ILL., (F) & (O), 115th St. & Cottage Grove
City (O) & (W), 333 No. Michigan Blvd.
CINCINNATI, OHIO, (O) & (W), 410 Commercial Square
(S), Sixth & Main Streets
CLEVELAND, OHIO, (F), 601 Canal Road
(O), 101 Prospect Avenue, N.W.
COFFEYVILLE, Kan., Smelter
COLORADO SPRINGS, COLO., (S), 129 E. Bijou Street
COLUMBIA, S. C., (S), 1713 Main Street
COLUMBUS, GA., (S), 1038 Broadway
COLUMBUS, OHIO, (S), 60 E. Gay Street
DALLAS, TEX., (O) & (W), 1621 Wall Street
(S), 301 No. Harwood Street
(S), 300 So. Beckley Street
DAVENPORT, IOWA, (S), 129 E. Second Street
DECATUR, ILL., (S), 366 No. Main Street
DES MOINES, IOWA, (S), 923 Locust Street
DENVER, COLO, (S), 1632 Arapahoe Street
DETROIT, MICH., (S), 134 Cadillac Square
(S), 9341 Grand River Avenue
(O) & (W), 1960 Milwaukee Ave., E.
EL PASO, TEX., (S), 216 No. Stanton Street
EVANSVILLE, IND., (S), 211 Main Street
FT. WORTH, TEX., (S), 208 W. Third Street
GALVESTON, TEX., (S), 23rd & Post Office Streets
GRAND RAPIDS, MICH., (W), 25 Ionia Ave., S.W.
HARTFORD, CONN., (S), 230 Trumbull Street
HAVANA, CUBA, (O) & (F), Manzana de Gomez 347
HOUSTON, TEX., (W), 2108-12 Preston Avenue
(S), 1400 Main Street
HUNTINGTON, W. VA., (S), 1018 Fourth Avenue
INDIANAPOLIS, IND., (O) & (W), 318 W. Georgia Street
JACKSON, MISS., (S), 219 E. Capitol Street
JACKSONVILLE, FLA., (O) & (W), 2320 Liberty Street
(S), 23 W. Monroe Street
JOHNSON CITY, N. Y., (S), 256 Main Street
JOPLIN, MO., (S), 623 Main Street
KANSAS CITY, MO., (O) & (W), 1400 St. Louis Ave.
KNOXVILLE, TENN., (S), 314 So. Gay Street
LEXINGTON, KY., (S), 337 E. Main Street
LITTLE ROCK, ARK., (S), 720 Main Street
LOS ANGELES, CALIF., (O) & (W), 652 Mateo Street
LOUISVILLE, KY., (W), 226 So. Third Street
MANSFIELD, OHIO, (S), 9 Park Avenue, W.
MEMPHIS, TENN., (S) & (W), 121 Union Avenue
MEXICO CITY, MEX., (2S), Apartado 2240 (Mail Address)
MIAMI, FLA., (S), 256 W. Flagler Street
MILWAUKEE, WISC., (W), 1256 No. 10th Street
MINNEAPOLIS, MINN., (O) & (W), 701 Third Street, No.
MOBILE, ALA., (S), 12 So. Royal Street
MONROE, LA., (S), 109 Catalpa Street
MONTGOMERY, ALA., (S), 33 Commerce Street
NASHVILLE, TENN., (O) & (W), Cummins Station
(S), 5th Avenue & Union Street
NEWARK, N. J., (O) & (F), Brown Street & Lister Avenue
(S), 138 Washington Street
NEW HAVEN, CONN., (W), 441 Chapel Street
(S), 166 Temple Street
NEW ORLEANS, LA., (O) & (W), 870 Fulton Street
(S), 329 Baronne Street
NEW YORK, N. Y., (W), 52 Thompson Street
(O), 292 Madison Avenue
OAKLAND, CALIF., (O) & (F), 1450 Sherwin Avenue
OKLAHOMA CITY, OKLA., (W), 223 E. Grand Avenue
(S), 211 W. First Street
OMAHA, NEBR., (W), Cor. Tenth & Dodge Streets
PENSACOLA, FLA., (S), 114 So. Palafox Street
PEORIA, ILL., (S), 318 So. Adams Street
PHILADELPHIA, PA., (O) & (W), Delaware & Chestnut Streets
PHOENIX, ARIZ., (W), 512 W. Jackson Street
PITTSBURGH, PA., (O) & (W), 55-56 Water Street
PORTLAND, ORE., (O) & (W), 484 Everett Street
PROVIDENCE, R. I., (W), 64 Traverse Street
RICHMOND, VA., (S), 515 E. Grace Street
(O) & (W), 1315 E. Main Street
ROCHESTER, N. Y., (S), 53 State Street
SAGINAW, MICH., (W), 515 Genesee Avenue
SALT LAKE CITY, UTAH, (W), 53 West Broadway
SAN ANTONIO, TEX., (S), 135 W. Commerce Street
SAN FRANCISCO, CALIF., (W), 466 Second Street
SAVANNAH, GA., (W), 725 Wheaton Street
SCHENECTADY, N. Y., (S), 128 Jay Street
SEATTLE, WASH., (O) & (W), 1048 Sixth Avenue, So.
SIOUX CITY, IOWA, (W), 216 Pearl Street
SPARTANBURG, S. C., (S), 158 E. Main Street
SPOKANE, WASH., (W), 157 So. Post Street
SPRINGFIELD, ILL., (S), 512 E. Monroe Street
SPRINGFIELD, MASS., (S), 323 Bridge Street
ST. LOUIS, MO., (O) & (W), 515 Spruce Street
SYRACUSE, N.Y., (W), 214-16 W. Jefferson Street
(S), 127 E. Water Street
TAMPA, FLA., (S), 713 Florida Avenue
Insecticide (W), Caesar & Conway Streets
TEXARKANA, TEX., (S), 309 Pine Street
TRENTON, N. J., (S), 119 E. Hanover Street
TULSA, OKLA., (W), 118 So. Cheyenne Avenue
UNIONTOWN, PA., (S), Penn & Beeson Streets
WACO, TEX., (S), 720 Austin Street
WARREN, OHIO, (S), 137 So. Park Avenue
WASHINGTON, D. C., (O), 921 Munsey Building
WHEELING, W. VA., (S), 22 Twelfth Street
WICHITA FALLS, TEX., (S), 818 Scott Street
WORCESTER, MASS., (S), 24 Mechanics Street
YOUNGSTOWN, OHIO, (S), 271 W. Federal Street


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VARNISHES, ENAMELS, STAINS, LACQUERS, PAINTS AND ALLIED PRODUCTS

For Walls, Ceilings and Woodwork

Satinette White Enamel—For finest enamel work. Gloss, flat and rubbed effect.

All Oyl Enamel—A master painter's enamel. White, ivory and gray. Gloss, flat and rubbed effect.

S.V.W. Flattine Washable Wall Paint—A non-glossy oil paint. Supplied in 16 colors.

S.V.W. Klean-Kote—A gloss finish for interior decoration, supplied in 8 delicate colors and white.

S.V.W. Wonder Koat—A medium gloss finish in 8 pastel shades and white.

S.V.W. 2-2-4 Kwickwork Enamel—A gloss, decorative enamel which dries in 2 to 4 hours. In 24 beautiful colors.

Preparatory Coats for New Work

Satinette Undercoat—An exceedingly opaque coating for use under Satinette Enamel.

All Oyl Undercoat—Its dense covering coupled with excellent leveling, permits a good two-coat finish when used in connection with All Oyl Enamel.

S.V.W. 2-2-4 Kwickwork Undercoat—Dries in 4 hours for use under 2-2-4 Kwickwork Enamels.

S.V.W. Pigmented Wall Sealer—A priming coat for use on interior walls and ceilings. Forms the proper foundation to prevent suction. Owing to its opacity, serves as one coat.

For Floors

Koverflor—A gloss, opaque enamel-like coating for inside and outside wood and cement floors. Superprotective and hard drying. Water, weather, oil and grease proof. Seals surface against all destructive forces. Supplied in 17 decorative colors, also black, white and clear.

Elastica Floor Varnish—A gloss varnish that dries overnight. Exceedingly elastic and durable. Recommended for finest work.

S.V.W. Four-hour Floor Varnish—Dries in 4 hours. Is waterproof, has excellent luster and is long wearing.

Standard Floor Preservative—A straw colored varnish-like material, applied with a wide floor sweeping brush.

Particularly recommended for wooden floors in public buildings where protection against wear and dust are required at small cost.

For Stained Surfaces

Kleartone Oil and Acid Stains—Non-fading, penetrating, lasting. Economical because they do not require sponging of the wood before or sandpapering after application.

Kleartone Paste Wood Fillers—For filling open grained woods. Supplied in 5 shades, also white.

SHORT FORM GENERAL SPECIFICATIONS

(For detailed specifications, see S.V.W. Architectural Reference Book)

Note: In enameling, varnishing or painting, ample light and ventilation are necessary to insure proper drying and hardening. Surfaces should be dry, free from grease, oil and dirt. Allow plenty of time between coats for drying.

Application of Enamels

On new wood, all sappy places should be given a coat of pure white shellac. Apply one or two coats of Enamel Undercoat, followed by one or two coats of Enamel, sandpapering with 00 sandpaper between each coat.

Application of Wall Finishes

New plaster walls should have a priming coat of S.V.W. Pigmented Wall Sealer. When dry, apply one or more coats of finish selected.

Application of Varnishes

For finest work, three coats are recommended, the first coat thinned with about 1 pint pure spirits of turpentine to the gallon of varnish. Sandpaper lightly with 00 paper between coats.

Application of Stains

Close Grain Woods—Apply stain of color selected and when thoroughly dry, apply one coat S.V.W. Kleartone Sealer (see S.V.W. Reference Book for shade required). When dry, apply varnish coats.

Open Grain Woods—Apply stain as above. When dry, apply Kleartone Paste Wood Filler in shade selected, wiping it off across the grain with burlap or excelsior before it sets. After 24 hours, apply Kleartone Sealer. Surface is then ready for varnish coats.

Application of S.V.W. Koverflor

Two coats are recommended for finest results.

On *cement* surfaces, thin first coat with at least 3 pints to 2 quarts of pure spirits of turpentine to gallon of Koverflor. Brush in well and allow to dry at least 24 hours. Follow with second coat in body as received in container, permitting at least 24 hours for drying.

On *exposed wood* surfaces first coat should have added to it 1 pint linseed oil and 1 pint pure spirits of turpentine to 1 gallon Koverflor. Second coat add linseed oil but omit turpentine.

On *interior wood* surfaces, omit oil and add 1 quart pure spirits turpentine to first coat. Second coat use Koverflor as received in container.

Note: A cement floor should not be treated with Koverflor until it has been down at least 6 weeks, and then only if it is dry. To safeguard against alkali wash floor with a solution of 10% muriatic acid and 90% water. Allow this to remain on floor 5 minutes, after which floor should be washed with clear cold water and allowed to dry out 10 days before applying Koverflor.

THE TRUSCON LABORATORIES

Paints, Varnishes, Enamels and Maintenance Products

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Products

BAR-OX (Inhibitive Steel Paint).

FUME-SAF (Chemical Resistant White Enamel).

ASEPTICOTE (Washable Wall Coating).

ALKABAR (Wall Sealer under Asepticote).

TRU-FLO and TRU-SEAL (One day Paint System).

TRUSCON WOOD FLOOR PRESERVATIVE.

WALL-LITE (Factory White).

LUMETEX (Aluminum Liquids for paint).

STONETEX (Dampproof Concrete Coating).

Also Super-Por-Seal (Transparent Dampproof Masonry Coating), Truscon Floor Sealer, Agatex (Chemical Floor Hardener), Granitex, Truscon Oil Stain.

For our pages on Integral Waterproofings and Floor Hardeners, see Manufacturers' Index.

Architectural Service

THE TRUSCON LABORATORIES manufacture a complete line of waterproofings and paint coatings formulated to meet individual requirements. The representatives of THE TRUSCON LABORATORIES are technically trained men whose duty it is to assist architects, engineers and owners in the selection of the proper material to meet their protective and decorative problems, by making a complete study of each requirement and furnishing detailed recommendations, without obligation.

Truscon Bar-Ox, Inhibitive Steel Paint

A metal protective coating, embodying a scientific combination of inhibitive pigments and waterproof oils, in accordance with the most advanced principles of iron and steel protection. The oils used in Bar-Ox are especially heat-treated so as to remove all moisture and impurities which might cause pin-holes to form in the paint film. Thus, Bar-Ox produces a waterproof, elastic film which effectively insulates iron or steel surfaces from contact with moisture. Actual service records under severe exposures in damp, tropical countries, as well as in the cold of the extreme northland, have definitely proved the superiority of Bar-Ox as a weather-protective coating for metal.

Bar-Ox is furnished in black and 14 standard colors. It is suggested that the shop-coat be specified as Bar-Ox Red, No. 142, and the field-coat as either Bar-Ox Black, No. 143 or Dark Green No. 144. These colors are recommended because of their economy and also because of their contrast, which makes the job of inspection for complete field-coat coverage easier and more certain.

Specifications for Painting Structural Steel

Remove all scale, dirt and foreign matter from structural steel before any painting is done in the shop.

Covered surfaces, surfaces in contact and all parts of riveted members shall receive 1 coat of Bar-Ox (color and number) before assembling. All finished members shall receive 1 coat of Bar-Ox (color and number) before being exposed to the weather. All bolts used in erection and remaining in the structure shall be dipped in Bar-Ox. All surfaces accessible after erection shall have all abraded spots touched up with Bar-Ox followed by a thorough coating over the entire surface of Truscon Bar-Ox.



Other Truscon Bar-Ox Steel Paints

Bar-Ox Smokestack Coating, Boiler Front Coating, Acid Coating, Alkali Coating, Embedded Coating, Conduit Coating, Gas Holder Coating, Aluminum Coating.

Truscon Asepticote, Washable Wall Coating

Asepticote is non-porous, sanitary, washable wall coating combining decoration with durability to an unusual degree.

Asepticote has proved in actual service and in tests conducted by institutions and building managers throughout the country, that its waterproofed, decorative film will withstand the abuse of repeated washings or scrubbings with alkaline washing compounds. Our representative will gladly demonstrate these unusual qualities of Asepticote to any architect or engineer.

Only 2 coats are necessary to secure a uniform, decorative and washable wall surface, by the use of Truscon Asepticote over Truscon Alkabar as the priming and sealing medium.

Truscon Alkabar, Wall Sealer

Alkabar is a specially developed alkali resisting wall primer or sealing medium that effectively overcomes the action of free lime and moisture in green plaster. Its use eliminates wall painting troubles such as suction, lime burn, etc., that are so often caused by failure of the "foundation" coat.

Specifications for Washable Wall Coating

Repair all cracks and damaged places. Before painting be sure the surface is free from dirt, grease, or other foreign deposits.

First Coat—1 qt. of Truscon Asepticote of the same color as finish coat shall be added to each gallon of Alkabar. The resulting mixture shall be thoroughly agitated before being applied and care shall be taken to see that it is brushed thoroughly into the surface to present a uniform even coating, and allowed 24 hours for thorough drying. Should any flat spots develop, due to unusual porosity, they shall be touched up with a spot coat of Truscon Alkabar before applying Asepticote.

Second Coat—After the above sealing coat has been allowed at least 24 hours' drying time, apply the finish coat of Truscon Asepticote flowed on to the surface and brushed out lightly to a uniform even finish. If on continued exposure to the air in an open package, Asepticote becomes thick and heavy, it shall be thinned with the minimum amount of Asepticote Liquid to give a body of the original consistency.

Note: In exceptional cases it may be desired to specify a three-coat application, the third application shall be Truscon Asepticote applied as it is received in the package.

Truscon Tru-Seal and Tru-Flo—One Day System for Interior Painting

Tru-Seal—A super-sealer—the latest development in sizes for interior plaster. It has the valuable property of filming over the surface. Tru-Seal is not affected by "hot spots" like ordinary sealers. Also, it "bridges over" hair checks.

Tru-Flo—A flat wall finish producing an absolutely uniform effect without laps or brush marks. A self-leveling flat. When used on new work in conjunction with Tru-Seal as a first coater—a complete, two-coat job of painting may be done in one day. The Tru-Flo finish is applied from 4 to 6 hours following the Tru-Seal. About Tru-Flo and Tru-Seal, it has with much truth been said—"Do a complete job of painting over new work in one day and use the room the same day."

Specifications for Tru-Seal and Tru-Flo Two-Coat System

General—Remove all kalsomine, loose paint, grease or dirt. All cracks should be filled with a paste made of plaster of paris and Tru-Seal. Touch up patched spots with Tru-Seal.

New Work—Two Coat—***First Coat (Over Smooth, Unfinished Plaster)***—Add 3 pints turpentine per gallon Tru-Seal.

First Coat (Over Rough, Unfinished Plaster)—Add 1 quart turpentine per gallon Tru-Seal.

Caution: Do not reduce or mix Tru-Seal with any material except as directed.

Finish Coat—One coat Tru-Flo Finish of color selected. Apply without thinning. This finish coat may be applied same day, allowing 4 to 6 hours for drying of Tru-Seal.

Repainting—Where old coat of paint is cracked and hair checked, proceed as with "new work" above.

Where old paint is in good condition and color difference is not too great, one coat of Tru-Flo Finish is sufficient.

Truscon Wall-Lite, Mill White Paint

A long oil pure white paint for walls and ceilings of industrial interiors, etc., where light reflection is desired.

Wall-Lite Finishing is furnished in enamel, eggshell and flat. It presents a dense, pure white film that is extremely durable and, when soiled, may be washed and renewed to its original whiteness.

Specifications for Mill White Paint

Surfaces to be painted shall be free from all dust and loosely attached matter, and oil or grease spots shall be touched up with a spot coat of Truscon Bitubar, or a thin coat of shellac.

New Construction—First coat shall be Wall-Lite Primer, applied as it is received in the package. Care shall be taken to see that the material is thoroughly brushed into the surface to insure proper penetration.

Second Coat: After the first application has been given 36 to 48 hours for drying, apply 1 coat of Truscon Wall-Lite Undercoater, and allow 36 to 48 hours' drying time before applying the final coat of Wall-Lite Finishing (Enamel or Eggshell). If to be applied by spray, thin to proper consistency with Truscon Wall-Lite Reducer. If by brush, no thinning is necessary.

Truscon Wood Floor Preservative

For preserving wood floors against dry rot and decay. Different from ordinary floor oils in that Truscon Wood Preservative is absorbed into the wood and dries, binding the fibers into a tough, wear-resisting mass. Truscon Wood Floor Preservative darkens the floor slightly (usually a desirable feature), but leaves no slippery film.

Truscon Floor Enamel

Truscon Floor Enamel is a material developed for the express purpose of enameling cement floors above grade. Truscon Floor Enamel is easy to apply, and thereby assures complete application being made. It dries to a tough elastic film with a subdued gloss that does not easily mar nor show scratches. Truscon Floor Enamel is furnished in 6 standard colors.

Specifications for Floor Enamel

The floor to be coated shall be absolutely dry and free from dust, grease, etc., before beginning work. Surface shall receive 1 application of Truscon Floor Sealer to uniform the surface.

Truscon Floor Enamel shall be applied directly to the dried surface with a good stiff 4-in. brush. Special care shall be taken to exert sufficient pressure during application so as to force the enamel thoroughly into the surface pores. 48 hours shall be allowed as drying time before subjecting enameled surface to light traffic.

Note: Where it is not desired to enamel concrete floors, it is recommended that they be treated with Truscon Agatex Chemical Floor Hardener, or Truscon Granitex, so as to eliminate dusting and disintegration of the surface.

Truscon LumeTex (Aluminum Coating)

Owing to the fact that freshly mixed aluminum paint has greater lustre, light reflecting value and "leafing" than ready mixed aluminum paint—Truscon LumeTex is put up in a special 5-gal. double compartment container in which the aluminum powder is kept separate from the liquid. The paint is thereby freshly mixed for the job.

LumeTex is obtainable in three types, namely: *LumeTex "A,"* for interior surfaces, walls, ceilings, including radiators; *LumeTex "B"* for exteriors, such as tanks, gas holders; *LumeTex "C"*—heat resisting, intended for metal smokestacks, ovens and other such surfaces where the temperature ranges fairly high.

Quantity Required—Metal—600 sq. ft. per gal. 1 coat; 350 sq. ft. per gal. 2 coats.

Concrete or brick—400 sq. ft. per gal. 1 coat; 250 sq. ft. per gal. 2 coats.

Truscon Fume-Saf

White enamel. (Also obtainable in eggshell finish.)

Intended for chemical exposures, such as hydrogen sulphide, aniline and similar fumes which darken ordinary white enamel quickly.

Truscon Fume-Saf is recommended for use whereever a white enamel or eggshell finish is required in chemical laboratories, bleacheries, rubber storage plants, bakeries, etc.

Quantity Required—Fume-Saf Undercoating: concrete and masonry—200 sq. ft. per gal. 1 coat; wood 250 sq. ft. per gal. 1 coat.

Fume-Saf Eggshell or Enamel: about 300 sq. ft. per gal. 1 coat.

Truscon StoneTex for Exterior Masonry

Truscon StoneTex is a specialized masonry coating combining decoration with durability. StoneTex effectively protects masonry from disintegration, by eliminating the absorption of moisture into brick, concrete and stucco. Moisture absorbed into such surfaces, contracts and expands with temperature changes, causing checking, cracking, and finally complete disintegration. From the viewpoint of decoration and protection, it is equally applicable to old and new masonry structures. It is supplied in 10 attractive shades that dry with a finish that closely resembles masonry.

Specifications for Coating Exterior Masonry

All surfaces must be absolutely dry and free from loosely attached matter—dirt, dust, grease, etc.

Application—***Unpainted Surfaces—First Coat***—Truscon StoneTex thinned in proportion of 1 gal. of StoneTex liquid to 5 gal. of StoneTex brushed out to a uniform even coating. Care shall be taken to stipple StoneTex into all uneven surfaces so as to insure complete application. 48 to 72 hours shall be allowed as drying time before applying final coat.

Second Coat—Truscon StoneTex applied as it is received in the package without thinning. If due to exposure in an open package, it becomes necessary to thin StoneTex, it may be reduced with a minimum amount of turpentine.

Painted Surfaces—The surface to be painted must be firm, clean and dry. All loose, blistered or scaly paint shall be removed down to a firm base, by wire brushing or scraping, before any StoneTex is applied. All bare spots shall receive a spot coat of StoneTex, reduced with 1 qt. of StoneTex Liquid to 1 gal., and allowed 48 hours as drying time.

To the thoroughly dry surface, apply a uniform application of StoneTex as it is received from the package. Care shall be taken to see that StoneTex is brushed well into the surface to insure bonding to the old paint.

U. S. GUTTA PERCHA PAINT COMPANY

FACTORY AND MAIN OFFICES
PROVIDENCE, R. I.

BRANCH OFFICES
NEW YORK, N. Y., 420 Lexington Avenue
CHICAGO, ILL., 659 Washington Boulevard
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Interior Finishing Coats

Interior Barreled Sunlight Enamel—An all-oil, high grade enamel, made by the exclusive Rice Process of manufacture. This process not only removes those portions of oil which have a tendency to turn white paint yellow (see guarantee on following page), but also adds greatly to the durability of Barreled Sunlight, its free flow and ease of tinting.



TRADE-MARK

Its handsome rich lustre with a pleasing depth of finish, is due largely to the extreme care and thoroughness exercised in the special methods by which the pigments are ground and mixed with the all-oil base. The smooth, non-porous finish is easily washed, yet frequent washing does not injure the finish or mar its beauty.

Where less lustre is preferred, Barreled Sunlight Semi-Gloss should be used. It is identical with the Gloss, except in degree of lustre.

Barreled Sunlight Chemic Enamel—A finishing coat for those surfaces where unusually severe service conditions prevail, such as chemical fumes, excessive heat or other discoloring agents—for example, hotel and restaurant kitchens, engine rooms, laboratories, oven rooms, bleacheries, rubber plants, etc.

It produces a smooth, white, washable finish similar to Interior Barreled Sunlight, but is reinforced to give white paint protection under such adverse conditions.

Barreled Sunlight Flat Wall Finish—An entirely new type of interior finish, capable of producing beautiful, lasting tints and designed to actually save labor and paint because of its unusual flow and tremendous spreading power. It dries with a faint sheen—just enough to resist dirt and dust collection and to withstand washing.

Barreled Sunlight Flat Wall Finish does not set up short, but holds a wet edge for a long time; therefore doing away with the danger of laps and flashes. These outstanding characteristics plus its amazing "slip" account for its popular preference by architects.

Rice's Flow-on—A practical and lasting oil paint, in *semi-paste* form, made from the highest grade lithopone ground in a processed linseed oil—to be reduced, preferably with Flow-on Reducing Oil, to meet the requirements of each individual job and type of plain or stippled finish. It produces a beautiful and uniform, washable finish and is used for every coat from primer to finish.

While standard specification is three-coat work, two coats can be successfully done, even in the white, because of its exceptional covering and spreading qualities.

Acoustolight—A decorative and protective finish for all types of acoustical materials. First put on the market in 1928, it has been widely and successfully used by leading architects in many prominent buildings. It is also recommended by outstanding acoustical material manufacturers, and copies of their letters of endorsement will be furnished on request.

Acoustolight can be applied by either brush or spray in white or any color desired and does not materially impair the efficiency of sound absorbing surfaces. Furthermore, acoustical materials finished with it can be conveniently washed, without the danger of flaking and dusting. Furnished in Flat only.

On request, our representative will demonstrate the application of Acoustolight and furnish complete instruction for its application over all types of acoustical surfaces.

Interior Priming Coats

Barreled Sunlight Granolith—A special priming coat for concrete, brick, cement plaster and similar porous surfaces. Especially prepared for this purpose, it provides the proper foundation for finishing coats.

Granolith Reducing Oil (No. 65 Reducing Oil)—A processed suction sealer to be used with Barreled Sunlight Granolith and recommended in place of boiled linseed oil or any other sealer. It carries added sealing properties so necessary to a priming coat to be applied over porous surfaces. It also causes the priming coat to dry through more thoroughly and more quickly.

Barreled Sunlight Plaster Sealer—An interior sealing and priming coat essentially for unpainted hard or smooth finish plaster. It does not merely lay on the surface, but penetrates and binds with a film that is tough and elastic. Properly applied, it will stop suction and hot spots and will seal fire cracks. Dries hard overnight, is easy to apply and levels out readily.

Barreled Sunlight Undercoat—For interior priming coat work over wood, metal and similar surfaces. An all-oil primer, it flows and spreads easily, providing a non-porous finish that holds out succeeding coats. Substantial in body and with great opacity.

Flow-on Reducing Oil—A special reducing liquid for properly conditioning priming coats of Rice's Flow-on to seal the surface and insure uniform appearance of succeeding coats. It is also used with Flow-on to obtain various types of finishes (see specifications).

Barreled Sunlight for Industrial Interiors

The gloss white idea for plant interior painting was introduced by Barreled Sunlight many years ago. Its ability to provide an intensely white finish, high in light reflection value, easy to keep clean and one that retains its whiteness for an unusually long time (see guarantee following) has led to its use in thousands of industrial plants of every description, such as textile mills, machine shops, food plants, laundries, etc.

For industrial interiors where the full gloss finish is not desired, we recommend Barreled Sunlight Extra Heavy Eggshell or Extra Heavy Flat—identical in characteristics to the Gloss except in degree of lustre.

GUARANTEE—Barreled Sunlight, the Rice Process White, is guaranteed to remain white longer than any oil gloss paint or enamel, domestic or foreign, applied under the same conditions and according to our specifications. If it does not do so, we will give, free, enough Barreled Sunlight to repaint the job.

Outside Barreled Sunlight

This unique paint represents the last word in the technology of paint for exterior use. The formula developed combines the proper pigments necessary for outdoor exposure and an adaptation of the Rice Process of treating the oil—the process which has so greatly contributed to the high quality and reputation of Interior Barreled Sunlight.

Intensely white, it is also free-flowing, has great hiding power and weathers slowly and evenly. Its greater durability is due to the special grinding of the pigments which are machine mixed for twenty hours, plus the processing of the raw linseed oil which is first aged and refined.

General Interior Painting Recommendations

All surfaces must be free from material injurious to paint and properly prepared to produce satisfactory work. No painting should be done until buildings are enclosed and heated, except in dry summer weather. At all times rooms should be well ventilated to avoid condensation during application and drying.

For best results with any paint sufficient time should be allowed for plaster, concrete, cement and unseasoned lumber to become dry before painting. Seal all knots, sappy and resinous spots in wood with shellac and allow to dry. Rust, scale and grease must be thoroughly removed from all iron work. Remove calcimine before refinishing old walls and ceilings.

A wash of zinc sulphate solution (2 lbs. zinc sulphate crystals per gallon of water) will assist in neutralizing excessive lime or alkaline conditons. Allow to dry thoroughly.

Contractor shall inspect all surfaces before starting work and make certain that these surfaces are in proper condition for painting. All plaster repairs should be sealed with the first coat mixture. After first or sealing coat is applied walls and ceilings should again be inspected to make sure surfaces are sealed tight. If any cracks, streaks or suction spots show they should be touched up with the first coat mixture. The same procedure also applies to all other porous surfaces—such as cement, concrete, brick, composition boards, etc.

Each coat should be properly mixed and properly applied if satisfactory results are to be expected. Always allow each coat of paint to dry *hard* before application of each succeeding coat.

Never use linseed oil, varnish or drier as a thinner for finishing coats. The Gloss and Semi-Gloss may be thinned slightly with turpentine if necessary. The Extra Heavy Flat and Extra Heavy Eggshell finishing coats are extremely heavy in body. They should be thinned liberally with turpentine or mineral spirits until they flow out evenly free from brush marks.

All materials shall be delivered in the original packages bearing the name and brand of the manufacturer.

Interior Barreled Sunlight Specifications

Wood, Metal and Similar Surfaces—

First Coat—Barreled Sunlight Undercoat—thin if necessary to a proper application consistency with turpentine or mineral spirits.

Second Coat—Barreled Sunlight Undercoat—thin if necessary as above.

Third Coat—Barreled Sunlight—Gloss, Semi-Gloss, Extra Heavy Eggshell, or Extra Heavy Flat. See "General Interior Painting Recommendations" for proper thinning.

Concrete, Brick, Cement Plaster and Similar Porous Surfaces—

First Coat—Barreled Sunlight Granolith—this coat should be reduced with Rice's No. 65 Reducing Oil, a processed suction sealer, which acts as a sealer to insure the uniform appearance of succeeding coats. As these surfaces vary widely in porosity, it is important (on two-coat jobs essential) that the first coat be so mixed and applied as to thoroughly seal the surface. It is suggested that small test areas of different proportions of Granolith and No. 65 Reducing Oil be painted out, adopting the mixture which gives the best results.

Second Coat—Barreled Sunlight Granolith—add 1 qt. of No. 65 Reducing Oil to each gallon and thin to the proper application consistency with turpentine or mineral spirits.

Third Coat—Barreled Sunlight—Gloss, Semi-Gloss, Extra Heavy Eggshell, or Extra Heavy Flat. See "General Interior Painting Recommendations" for thinning.

Hard or Smooth Finish Plaster—

First Coat—Barreled Sunlight Plaster Sealer.

Second Coat—Barreled Sunlight Undercoat—add at least 2 qts. Barreled Sunlight Plaster Sealer to each gallon and thin to proper application consistency with turpentine or mineral spirits.

Third Coat—Barreled Sunlight—Gloss, Semi-Gloss, Extra Heavy Eggshell or Extra Heavy Flat. See "General Interior Painting Recommendations" for reducing Gloss and Semi-Gloss. When using Extra Heavy Flat or Extra Heavy Eggshell on the above surfaces they should be thinned and applied as a flat wall paint.

Iron and Steel Work—Prime all iron and steel work with one coat of Rice's Red Oxide Anti-Corrosive Paint. Then follow regular Barreled Sunlight Specifications.

Two-coat Work—Same specifications as for three-coat work but omitting the intermediate coat.

Repainting Over Cold Water Paint or Whitewash—Scrape all loose scale and dirt from surface, using wire brush. Apply Barreled Sunlight Undercoat thinned liberally with boiled linseed oil. Add 1 qt. of boiled linseed oil to each gallon of Barreled Sunlight Undercoat for from one to three applications of cold water paint—for three or more coats use equal parts of boiled linseed oil and Barreled Sunlight Undercoat. The purpose of this reduction is to make Barreled Sunlight Undercoat strike through any remaining cold water paint not removed by scraping, bonding the same securely to the surface in order to secure a finish that will not peel. Allow three or four days for drying, then apply finishing coats of Barreled Sunlight as directed above.

For Chemically Active Atmospheric Conditions and Heat—Where unusually severe service conditions, such as chemical fumes, excessive heat or other discoloring agents prevail, use Barreled Sunlight Chemic Enamel as a finishing coat. Follow standard Interior Barreled Sunlight three-coat specification substituting Extra Heavy Flat for the intermediate coat.

Barreled Sunlight Flat Wall Finish and Plaster Sealer Specifications

Unpainted Hard or Smooth Plaster—

First Coat—Apply Barreled Sunlight Plaster Sealer. Touch up with Barreled Sunlight Plaster Sealer any cracks, streaks or suction spots which show through this coat.

Second Coat—To each gallon of Barreled Sunlight Flat Wall Finish add at least 2 qts. of Barreled Sunlight Plaster Sealer and thin with turpentine or mineral spirits if necessary.

Third Coat—Apply Barreled Sunlight Flat Wall Finish thinned with a small amount of turpentine or mineral spirits if necessary.

Sand Finish, Rough or Textured Plaster, Cement, Brick, Concrete, Composition Boards, Canvas Walls, and Other Porous Surfaces—

First Coat—Mix Barreled Sunlight Plaster Sealer and Barreled Sunlight Flat Wall Finish according to the porosity of the surface. As these surfaces vary widely in porosity it is important (on two-coat jobs essential) that this coat be so mixed and applied as to thoroughly seal the surface and properly hold out succeeding coats. It is suggested that small test areas of different proportions of Plaster Sealer and Flat Wall Finish be painted out, adopting the mixture which gives the best results.

Second and Third Coats—Same as under "Unpainted Hard or Smooth Plaster."

Two-Coat Work—Same specifications as for three-coat work but omitting intermediate coat.

Repaint Work—Apply one or two coats of Barreled Sunlight Flat Wall Finish thinned with a small amount of turpentine or mineral spirits if necessary. For *best* results, these surfaces should first be sealed with a mixture of Barreled Sunlight Flat Wall Finish and Barreled Sunlight Plaster Sealer. As surfaces vary in porosity, we suggest for average conditions, adding at least 2 qts. of Barreled Sunlight Plaster Sealer to each gallon of Barreled Sunlight Flat Wall Finish and thinning with turpentine or mineral spirits if necessary.

Rice's Flow-On Specifications

Unpainted—Smooth, Sand Finish, Rough or Textured Plaster, Cement, Concrete, Brick, Composition Boards, Canvas Walls, etc.

First Coat—Rice's Flow-On—reduce liberally with Rice's Flow-On Reducing Oil (a processed suction sealer) according to the porosity of the surface.

Second Coat—Rice's Flow-On—reduce with a mixture of Flow-On Reducing Oil and turpentine or mineral spirits.

Third Coat—Rice's Flow-On—for flat finish thin with turpentine or mineral spirits. No brush marks will show if Rice's Flow-On is sufficiently thinned.

For eggshell finish thin with a mixture of Flow-On Reducing Oil and turpentine or mineral spirits. No brush marks will show if Rice's Flow-On is sufficiently thinned.

For *flat stipple* finish thin with turpentine or mineral spirits.

For *eggshell stipple* finish thin with a mixture of Flow-On Reducing Oil and turpentine or mineral spirits.

For *gloss stipple* finish reduce with Flow-On Reducing Oil.

Unpainted—Wood, Metal and Similar Surfaces—

First Coat—Rice's Flow-On—thinned with a mixture of Flow-On Reducing Oil and turpentine or mineral spirits.

Second Coat—Follow second coat specifications as for "Unpainted—Smooth, Sand Finish Plaster, etc."

Third Coat—Follow third coat specifications as for "Unpainted—Smooth, Sand Finish Flaster, etc."

Two-coat Work—Same specifications as for three-coat work but omitting *Second Coat.*

Repaint Work—Same specifications as for three-coat work but omitting *Second Coat.*

Tinting

Barreled Sunlight products are all easily tinted with pure colors ground in oil. Priming coats should always be tinted to approximately the same shade as finishing coats. In quantities of 5 gals. or over we tint to order at the factory without extra charge, matching any color sample submitted.

Spraying

Barreled Sunlight products can be applied with a spray gun equally as satisfactorily as by brush. Being all-oil products they flow easily and freely through the spray nozzle.

Packages

Barreled Sunlight products are put up in churn-equipped steel drums, 5-gal. steel buckets and in cans.

References

We shall be glad to furnish both national and local references. A few representative users are featured below.



McGraw-Hill Building, New York, N. Y.
RAYMOND HOOD, GODLEY & FOUILHOUX, Architects
2200 gal. of Barreled Sunlight products were used



DeVilbiss School, Toledo, Ohio
M. ED. GEE (Toledo Board of Education), Architect
Finished throughout with 2400 gal. of Barreled Sunlight products

Monticello, the Home of Thomas Jefferson, Charlottesville, Va.
Recently painted inside and out with Barreled Sunlight products





The Springfield Hospital, Springfield, Mass.
STEVENS & LEE, Architects H. L. ROSS CO., INC., Painting Contractors
900 gal. of Barreled Sunlight products were used

DURALITH CORPORATION

521 Fifth Avenue, NEW YORK, N. Y.

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DECORATIVE WALL FINISHING MATERIALS

Applied by New Methods

Duralith products are new and improved decorative wall finishing materials of the plastic type. They include the following:

(1) *Duralith,* a blend of minerals with casein, in powdered form, for mixing with water.
(2) *Duratint,* a coloring material to be mixed with water for spray application on Duralith before hardening of the surface.
(3) *Duraglaze,* an oil and wax glaze of the usual type for use in the conventional manner over the hardened surfaces of any of the usual types of texture body materials.

It is by the use of Duralith in combination with the *spray method* in applying Duratint color on the freshly applied body, that the Duralith materials and methods save time, labor and materials and offer advantages of effect and economy heretofore unattainable. Other textured wall finishes must harden before being glazed.

The Duralith Body Coat

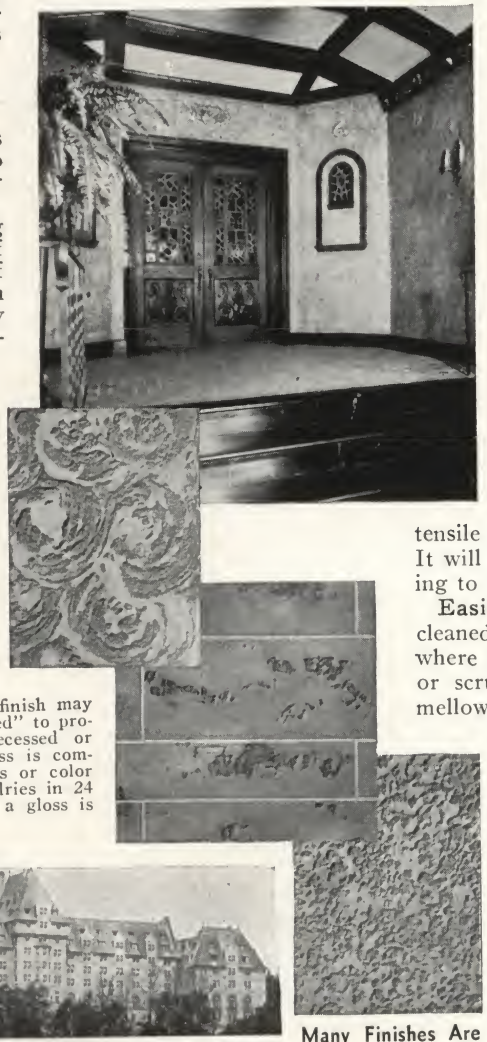
In the Duralith process, Duralith is mixed with cold water in quantity to secure the proper consistency for application with brush or trowel.

For wall decoration the texturing may be done in a countless variety of ways, depending on the character of texture desired. Simply stippling with the brush or a sponge produces very attractive and much used base surface patterns.

"Glazing" with Duratint

Duratint is the new Duralith color medium for use with Duralith only. It is pure color finely ground in paste form, mixed in water (30 to 1) and is made in a wide range of colors. The Duratint color mixture is applied with a spray gun—hand or electric.

Finish—While Duralith is still wet and plastic the Duratint mixture is lightly sprayed on, either uniformly for over-all effects, or in spots using different colors (separately sprayed) for pastel effects. The color bonds and becomes integral with body coating. Final finish may be left as sprayed or immediately "triangled" to produce "high lights" and characteristic recessed or etched surface effects. The entire process is completed without waiting for body materials or color coatings to dry or harden. The surface dries in 24 to 48 hours to a dull matt finish but if a gloss is desired, it may be shellacked.



Many Finishes Are Possible with Duralith



Hotel Manoir Richelieu, Murray Bay, Canada
The walls of this famous hotel are attractively finished with Duralith

Economy and Simplicity of Application

The process described outlines only one of the many different adaptations of Duralith, but it illustrates the complete plastic nature of the material at all stages of the work and shows the time and labor saving processes.

Five different operations are eliminated at a considerable saving in labor.

The operations of coloring and finishing by the old method usually require skilled labor, but with Duralith and Duratint, anyone may, after a little experimenting, apply the materials with perfect success.

A feature, *exclusive with Duralith,* is that the final finish is observable while the material *is still wet.*

It can be scraped off and changed at this stage, while with a hardened body, faults in finishing cannot be satisfactorily remedied.

Variety of Adaptation

Duralith offers an endless variety of finishes. Stipples of all kinds, scrolls, swirls, travertine and other stone and stucco effects are among the possibilities.

All kinds of rustic and imitation effects may be devised.

Duralith, for wall decoration, may be applied over any surface that can be painted, plastered or cement coated. It may be used simply as a texture paint over any paintable surface.

Duralith is ideal for painting or decorating all kinds of wallboard and insulating board.

Qualities and Properties of Duralith

Uniform Quality—Duralith products are manufactured under laboratory and technical supervision which insure uniformity and the highest standard of quality.

Strength, etc.—For toughness, elasticity, tensile strength and adhesion Duralith is unsurpassed. It will not crack, chip, flake or peel if applied according to directions packed in every bag.

Easily Cleaned—Duralith wall finish should be cleaned with a dust cloth, slightly moistened only where necessary to remove any dirt stains. Washing or scrubbing are unnecessary and only destroy the mellowness which comes with age.

Advisory Service and Display Show Rooms

Examples of the use of Duralith are on view at our offices and showrooms *where the actual operations of application are demonstrated.*

Architects throughout the United States, Canada, Australia and Latin America are invited to use our facilities when in New York or to write for the address of the nearest *factory branch distributor* where ample stocks are carried and permanent exhibits are displayed. Shipments are made from the nearest point.

THE MURALO COMPANY, INC.

Decorative Wall Coatings, Calcimines, Texture Paints, Water Paints, Cement Paints, Wall Sizes and Patching Plasters

570 Richmond Terrace, STATEN ISLAND, N. Y.

BOSTON, MASS., 34 Lewis Wharf
CHICAGO, ILL., 317 North Wells Street
ATLANTA, GA., 134 Walker Street
SAN FRANCISCO, CALIF., Potrero and 18th Streets

Muralo Decorative Wall Coatings—High Grade Calcimine

The ideal water colors for decorating interior walls and ceilings in all manner of residences and public buildings where harmonious color treatments are essential factors. Available in white and a wide range of attractive tints and rich deep colors. Manufactured in dry powder form and require only the addition of water to prepare them for immediate application on plaster, wall board, wood, canvas and burlap.

Decorative Value—Muralo Wall Coatings are perfectly adaptable to any type of decoration, no matter what the style, the general treatment or proposed color scheme may be. Walls and ceilings in any type of building can be artistically decorated at moderate cost, with beautiful soft tinted effects. The dainty, delicate tints and the deep subdued colors with their rich velvety finish, devoid of gloss or glare, afford unlimited possibilities to achieve color effects and harmonies that express cheerfulness and good taste in interior decoration.

Economy is often one of the deciding factors, when choosing the form of decoration for walls and ceilings, yet the finish must possess real decorative merit. That is why Muralo Wall Coatings are recommended and used everywhere by leading craftsmen who recognize the possibilities of wall coatings that are really decorative and at the same time economical to use.

Brands—Muralo, Calcimo, Dutch Kalsomine, Suntone, Cal-o-tint.

Hi-Tex Textural Finish—Plastic Paint

A plastic paint of modern invention by which a most interesting and unusual array of decorative effects in both texture and color may be obtained. Manufactured in dry powder form and requires only the addition of water to prepare it for immediate application on interior wall and ceiling surfaces.

Decorative Value—Hi-Tex Textural Finish provides a decorative medium which enables modern craftsmen to reproduce faithfully the interesting and attractive Old World textured walls easily and economically. The textured walls of centuries ago, so in vogue in modern architecture and decoration, were, until quite recently, confined to the more elaborate homes and buildings because of the high cost of reproduction. The artisan of old achieved these effects through laborious methods and with crude materials.

A really fascinating product is Hi-Tex for those who possess an artistic turn of mind because it offers limitless opportunity for unique and interesting effects. Many painter-decorators have developed into experts in its use, and can produce with the greatest ease not only reproductions of the classic period wall textures, but countless individual textured treatments as well.

Brands—Hitex, Mural-Tex.

King's Perfected Interior Cold Water Paint

A durable snow-white paint that possesses sanitary, fire-retarding and light-reflecting properties. Manufactured in dry powder form and requires only the addition of water to prepare it for immediate application on wood, brick, stone, concrete, cement, plaster and other interior surfaces.

Adaptability—King's Cold Water Paint fills a specific need for a high grade painting material that compares favorably with expensive oil paints for the interior painting of certain types of buildings, and yet is low enough in cost to spell real economy. It is especially designed for the interior painting of factories, mills, warehouses, garages and similar types of buildings where large areas of wall and ceiling surfaces have to be maintained in spic and span condition at a minimum cost.

Indeliblo Exterior Cold Water Paint

A perfectly blended, smooth, easy spreading casein paint that possesses weather-resisting and fire-retarding properties. Available in white, black, and a range of 18 attractive colors. Manufactured in dry powder form and requires only the addition of water to prepare it for immediate application on wood, brick, stone, concrete, cement, and other exterior surfaces.

Adaptability—Especially designed for painting the exteriors of factories, warehouses and all types of industrial buildings. In the larger cities it is used extensively for the painting of airshafts and courtyards of apartment buildings and tenements, due to its sanitary and light-reflecting properties. In farming sections it provides a means of painting farm buildings at a relatively low cost as compared with oil paints.

Indeliblo is particularly adaptable for exterior use and resists the weather remarkably well, but it can also be used for interior work if desired. Where economy is a factor, or where the use of expensive oil paints is not essential for one reason or another, Indeliblo can be relied on to give highly satisfactory service.

Muralo Cement Paint

A special paint based on the cement principle, employing in its manufacture white portland cement as the basic raw material.

Adaptability—Muralo Cement Paint is especially designed for painting concrete, stucco, brick, building tile, hollow tile, cinder block, stone and porous masonry wall surfaces in general, both outside and inside. Aside from its excellent wearing and lasting properties, it is decorative in every sense of the word, making it quite adaptable for any type of building where the preservation and decoration of masonry surfaces are important factors. Available in white and 10 attractive colors.

GLASS AND GLAZING

GLASS AND PAINT PRODUCTS *of the*

PITTSBURGH PLATE GLASS COMPANY

PAINTS VARNISHES
ENAMELS LACQUERS
PENNVERNON WINDOW GLASS
VISTA PLATE GLASS
FLESH TINTED PLATE GLASS
WATER WHITE PLATE GLASS
HEAVY PLATE GLASS
MULTIPLATE
DUPLATE SAFETY PLATE GLASS
DUOLITE SAFETY SHEET GLASS
AEROLITE
COPPER BACK MIRRORS
TAPESTRY GLASS
EASYSET METAL STORE FRONT CONSTRUCTION
CARRARA STRUCTURAL GLASS

PITTSBURGH *Proof* Products
Glass
Paint · Varnish
Lacquer · Brushes

THE ORIGIN AND DEVELOPMENT OF THE PITTSBURGH PLATE GLASS COMPANY



BRIEF HISTORY

• The Pittsburgh Plate Glass Company was established by Mr. John Pitcairn in 1883, for the purpose of manufacturing plate glass, with its first factory at Creighton, Pa. Prior to that time we were dependent upon Europe for plate glass. By 1896 the company had nine factories and two coal mines. In that year the now unique warehouse system was started with seven warehouses. Since then the company has expanded into many allied activities and has increased its warehouse system. The Patton Paint Company with its affiliates, the Pitcairn Varnish Company, the Corona Chemical Company and the Red Wing Linseed Oil Company were secured to insure and standardize the distribution of paint products. The Rennous-Kleinle Company, manufacturers of "Horseshoe" brushes, was acquired with a brush factory and brush handle factory. For the manufacture of chemicals and cement the Columbia Chemical Company was acquired. Recently the Ditzler Color Company was secured as an additional supply of lacquers.

All developments could not possibly be covered here. If you are interested in complete details, booklets giving them will be gladly furnished.

PRODUCTION AND SERVICE

The Pittsburgh Plate Glass Company, the largest glass company in the world, owns and operates thirty-two strategically located factories in the United States, and one in Europe; manufacturing plate glass of all kinds, safety glass, window glass, practically all types of flat glass; manufacturing paint, varnish, enamel, lacquer, linseed oil, brushes and many other products used in the building construction field. These products are distributed through seventy-one completely stocked warehouses in principal trading centers, direct from the factories and through jobbers. The service facilities of the company are unexcelled in its field. A corps of highly trained competent men is maintained to serve the Architectural Profession. These men work in cooperation with the warehouse system and are so placed geographically as to serve all the architects of the country.

PRINCIPAL PRODUCTS

Polished Plate Glass
Vista Plate Glass
Flesh Tinted Plate Glass
Water White Plate Glass
Heavy Polished Plate Glass
Heavy Rough Glass
Tapestry Glass
Bent Glass

Duplate Safety Plate Glass
Multiplate–Bullet Proof Glass
Carrara Structural Glass
Pennvernon Window Glass
Pennvernon 16 oz. Picture Glass
Pennvernon Heavy Sheet Glass, 3-16″ and 7-32″

Mirrors
Paint
Varnishes
Enamels
Lacquers
Structural Finishes
Aircraft Finishes
Automotive Finishes

Industrial Finishes
Railway Finishes
Dry Colors
Brushes
Chemicals
Cement
Easyset Store Front Construction

For list of warehouses and map showing warehouses and factories see back cover.

PITTSBURGH PLATE GLASS COMPANY

Manufacturers of Glass, Paint, Varnish, Lacquer and Brushes for All Purposes

GENERAL OFFICES

Grant Building, PITTSBURGH, PA.

Pittsburgh Proof Products are dependable as to quality and available at a nearby source of supply—through the distributing system of the PITTSBURGH PLATE GLASS CO.

For list of warehouses and map showing warehouses and factories see back cover.

PAINT AND VARNISH DIVISION

LOS ANGELES, CAL. SAN FRANCISCO, CAL. SEATTLE, WASH. PORTLAND, ORE.

EXPORT OFFICE: Newark, N. J., Foot of Chester Avenue

NEW YORK OFFICE: 10 E. 40th Street

FACTORIES, PAINT AND VARNISH DIVISION

Milwaukee, Wis. Newark, N. J. Portland, Ore. Los Angeles, Calif. Detroit, Mich.

PAINTS AND VARNISHES

SUN-PROOF PAINT....Standard since 1855. For all exterior painting.

WALLHIDE EXTERIOR PRIMER....The "Vitolized Oil" exterior primer for wood, metal, concrete and stone.

SNOLITE....A semi-paste white paint for general exterior and interior painting.

PLASCO READY-MIXED PAINT....For general exterior painting where price is a factor.

CEMENTHIDE....For interior or exterior standing surfaces of stone, cement and stucco work.

IRONHIDE....Unparalleled protection for iron and steel construction.

PITTSBURGH BARN AND ROOF PAINT....Recommended for metal roof and rough building painting only when price is a factor.

TORON SHINGLE STAIN....Ready mixed shingle stain.

FLORHIDE ENAMEL....For interior or exterior wood or cement floors—also interior standing woodwork and trim.

WALLHIDE FIRST-COATER....New type "Vitolized Oil" first coater for all interior painting, new or old walls.

WALLHIDE INTERIOR FLAT AND SEMI-GLOSS....The "Vitolized Oil" interior wall finish which permits application of two coats in one day.

PLASTIC VELUMINA....Ready to use plastic paint for interior decorative work.

BANZAI DOUBLE COVER UNDERCOAT....Solid hiding, elastic undercoat for high grade enamel work.

BANZAI WHITE ENAMEL....For all high class, durable enamel work.

ALBA-LUX, FLAT EGGSHELL, GLOSS....A modern light reflecting paint for industrial building interiors. White only.

WATERSPAR QUICK DRYING ENAMELS....High quality, durable, quick drying colored enamels for furniture, toys, etc. Can also be used on walls and woodwork.

WATERSPAR QUICK DRYING VARNISHES....Quick drying, durable varnishes, interior or exterior use.

UTILITY ENAMELS....A durable, quality enamel of the slow drying type for general all around enamel work.

PITCAIRN WOOD STAINS....Rich color, penetrating oil stains.

PITCAIRN VARNISHES....Quality, well-aged, varnishes for every interior or exterior requirement.

TECTOR....Elastic foundation for paint, varnish, enamel or wax.

ARCHITECTURAL SPECIFICATIONS FOR PAINTING AND VARNISHING

General Conditions

General

The general conditions and instructions to bidders as applied on the general contract, apply also on the painting contract.

Scope of Work

The work to be done by the painting contractor includes the furnishing of all material, labor, tools and equipment which shall be required to complete the painting and finishing of the building as specified.

Exceptions

The painting contract does not include shop coats.

Workmanship

All work shall be done in a workmanlike manner and by skilled mechanics. All materials shall be evenly spread and smoothly flowed on and shall be free from runs or sags, and no paint, varnish or enamel shall be applied until preceding coat is thoroughly dry and hard.

No exterior painting shall be done in rainy, damp or frosty weather or until the surface is thoroughly dry.

No interior painting or finishing shall be permitted until the building has been thoroughly dried out by artificial heat.

Exterior oil paints shall be allowed to dry at least 48 hours between coats. Interior paints shall be allowed to dry at least 24 hours between coats.

Enamels and varnishes shall be allowed to dry at least 48 hours between coats unless noted in the detail specifications and shall be sanded lightly between coats with No. 0 sandpaper and dusted before succeeding coat is applied.

After applying paste wood fillers, excess shall be carefully and neatly cleaned from the surface by rubbing across the grain. All nail holes shall be filled with putty, tinted to match finish.

Preparation of Surfaces

The painting contractor shall be wholly responsible for the finish of his work, and, therefore, shall not commence any part of it until the surface is in proper condition in every respect. If the painting contractor considers any surface so unsuitable for the proper finish of his work that it cannot be rectified by slight sanding, he shall notify the Architect of this fact in writing before any materials are applied and he shall not apply any material until the unsuitable surfaces have been made satisfactory, or the Architect has instructed him to proceed with the work.

All *knots or sappy spots* shall be given one coat of shellac at least 10 hours before painting.

All necessary *puttying of nail holes, cracks and blemishes* shall be done after the priming coat has become hard and dry and before the second coat is applied, and the putty shall match the shade of the finish coat.

On old paint the surface shall be first brushed with a wire brush or sandpapered and where it is scaling badly, shall be scraped or burned off.

All greasy or oily metal surfaces shall be cleaned with tur-

See our Architectural Specification Book for detailed description of products mentioned above and for color charts.

pentine or benzine before applying any materials. *All scale or rust* shall be removed by scraping or wire brushing.

No paint shall be applied to *concrete* that has not aged for at least 30 days. Wire brush to remove all loose or scaling particles.

The painting contractor shall be expected to correct all *hot spots and alkali* present in *masonry surfaces* that are to be painted, and no work will be accepted that is blemished by these factors.

Materials

All materials used under painting contract shall be as manufactured by the PITTSBURGH PLATE GLASS Co. and shall be delivered on the work in the original sealed containers.

All mixing required shall be done on the premises, and the materials shall be thoroughly stirred and agitated. No materials shall be reduced or changed in any way except as and when specified, and thinners must be pure.

Any tinting or matching of colors shall be done under the supervision of the Architect. In all cases a sample shall be applied on the job and the Architect must give his approval of it before the work is actually begun.

Protection of Property

The painting contractor shall be responsible for the condition of the building in his charge. He shall protect adjacent work and materials as well as his own.

Inspection

Every facility shall be provided for inspection of the work at any time by the Architect or his authorized representative.

Any work not conforming to these specifications shall be cleaned off and repainted at the expense of the contractor.

Removal

When the work is completed, the painting contractor shall remove all surplus materials, scaffold, etc., and he shall clean off all misplaced paint, varnish, etc., so as to leave the premises in perfect condition, acceptable to the Architect.

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SPECIFICATION NO. 1

Metal Paint for Iron or Steel Surfaces—Ornamental Iron—Normal Exposure

Ironhide Paint—THREE COAT WORK—*First Coat*—Ironhide—Inhibitive Red.

Second Coat—Ironhide—Inhibitive Brown.

Third Coat—Ironhide—Finishing Black or shade as selected.

TWO COAT WORK—*First Coat*—Ironhide—Inhibitive Red or Brown.

Second Coat—Ironhide—Finishing Black or shade as selected.

Ironhide Paint and Liquid Graphite Paint—THREE COAT WORK—*First Coat*—Ironhide—Inhibitive Red or Brown.

Second Coat—Liquid Graphite (Natural).

Third Coat—Liquid Graphite (Natural).

TWO COAT WORK—*First Coat*—Ironhide—Inhibitive Red or Brown.

Second Coat—Liquid Graphite (Natural).

SPECIFICATION NO. 2

Metal Paint for Iron or Steel Surfaces—Abnormal Exposure

Recommendations should be obtained from manufacturer to cover abnormal cases.

SPECIFICATION NO. 3

Metal Paint for Iron or Steel Surfaces—Hot Surfaces

Recommendations should be obtained from manufacturer after describing specific conditions involved.

SPECIFICATION NO. 4

Metal Paint for Metal Roofs

Ironhide—*First Coat*—Ironhide—Inhibitive Red.

Second Coat—Ironhide—Inhibitive Red or shade as selected.

Pittsburgh Barn and Roof Paint—*First Coat*—Pittsburgh Barn and Roof Paint (Red or Gray).

Second Coat—Pittsburgh Barn and Roof Paint (Red or Gray).

Liquid Graphite—*First Coat*—Ironhide—Inhibitive Red.

Second Coat—Liquid Graphite (Natural).

SPECIFICATION NO. 5

Metal Paint for Galvanized Iron

First Coat—Galvanized Iron Primer (Structural Maintenance Line) Furnished in two compartment can. Mix powder with liquid thoroughly and apply by brush or spray, being sure entire surface is completely covered. Allow twenty-four hours for drying.

Second Coat—Ironhide—Inhibitive Brown.

Third Coat—Ironhide—Finishing Black or shade as selected; or Sun-Proof Liquid Paint, shade as selected.

For list of warehouses and map showing warehouses and factories see back cover.

See our Architectural Specification Book for detailed description of products mentioned above and for color charts.

SPECIFICATION NO. 6
Aluminum Paint for Iron or Steel Surfaces—Normal Exposures

Pittsburgh Aluminum Paint Liquid—THREE COAT WORK—*First Coat*—Ironhide—Inhibitive Red.

Second Coat—Aluminum Paint Liquid No. 20.

Third Coat—Aluminum Paint Liquid No. 20.

TWO COAT WORK—*First Coat*—Ironhide—Inhibitive Light Gray.

Second Coat—Aluminum Paint Liquid No. 20.

Note: Aluminum Paint requirements should be prepared from day to day by mixing together one gallon Aluminum Paint Liquid (number as specified) and two pounds Aluminum Bronze.

For lower grade paint substitute "Aluminum Paint Liquid No. 30."

SPECIFICATION NO. 7
Aluminum Paint for Iron or Steel Surfaces—Hot Surfaces

Pittsburgh Aluminum Paint Liquid—ONE COAT WORK—Aluminum Paint Liquid No. 40.

Note: Aluminum Paint requirements should be prepared from day to day by mixing together one gallon Aluminum Paint Liquid (number as specified) and two pounds Aluminum Bronze.

SPECIFICATION NO. 8
Aluminum Paint for Exterior Surfaces—Wood—Normal Exposure

Pittsburgh Aluminum Paint Liquid—*First Coat*—Aluminum Paint Liquid No. 30.

Second Coat—Aluminum Paint Liquid No. 20.

Note: Aluminum Paint requirements should be prepared from day to day by mixing together one gallon Aluminum Paint Liquid (number as specified) and two pounds Aluminum Bronze.

For lower grade of paint substitute Aluminum Paint Liquid No. 30 for No. 20.

SPECIFICATION NO. 9
Aluminum Paint for Interior Surfaces—Plaster and Wallboard

Pittsburgh Aluminum Paint Liquid—*First Coat*—Wallhide Interior First Coater, each gallon reduced with 2 pints of Leptyne or Turpentine.

Second Coat—Aluminum Paint Liquid No. 20.

Note: Aluminum Paint requirements should be prepared from day to day by mixing together one gallon Aluminum Paint Liquid (number as specified) and two pounds Aluminum Bronze.

SPECIFICATION NO. 10
Aluminum Paint for Interior Surfaces—Wood

Pittsburgh Aluminum Paint Liquid—*First Coat*—Aluminum Paint Liquid No. 30.

Second Coat—Aluminum Paint Liquid No. 20.

Note: Aluminum Paint requirements should be prepared from day to day by mixing together one gallon Aluminum Paint Liquid (number as specified) and two pounds Aluminum Bronze.

SPECIFICATION NO. 11
Enamel Paint for Ornamental Iron—Interior

Banzai or Waterspar—*First Coat*—Wallhide Interior First Coater, each gallon reduced with 2 pints of Leptyne or Turpentine, *or* Pitcairn Tector, each gallon reduced with 1 quart of Leptyne or Turpentine.

Second Coat—Banzai Double Cover Undercoater, *or* Wallhide Finishing Coat Flat White.

Third Coat—Banzai Double Cover Undercoater, *or* Wallhide Finishing Coat Flat White.

Fourth Coat—Banzai Enamel, *or* Waterspar Enamel (Quick-Drying).

Note: Above Enamels, Gloss or Eggshell, in shades as selected.

SPECIFICATION NO. 12
Enamel Paint for Metal Trim and Ceilings

Banzai Enamel—*First Coat*—Wallhide Interior First Coater, each gallon reduced with 2 pints of Leptyne or Turpentine, *or* Pitcairn Tector, each gallon reduced with 1 quart of Leptyne or Turpentine.

Second Coat—Banzai Double Cover Undercoater.

Third Coat—Banzai Double Cover Undercoater, each gallon reduced with 1 gallon Banzai Enamel.

Fourth Coat—Banzai Enamel, Gloss or Eggshell, shade as selected.

Waterspar or Plasco Enamel—*First Coat*—Wallhide Interior First Coater, each gallon reduced with 2 pints of Leptyne or Turpentine, *or* Pitcairn Tector, each gallon reduced with 1 quart of Leptyne or Turpentine.

Second Coat—Plasco Undercoater, *or* Wallhide Finishing Coat Flat White.

Third Coat—Waterspar Enamel (Quick-Drying), each gallon reduced with 1 gallon Plasco Undercoater, *or* Plasco Enamel, each gallon reduced with 1 gallon Plasco Undercoater.

Fourth Coat—Waterspar Enamel (Quick-Drying), *or* Plasco Enamel.

Note: These Enamels, Gloss, in shade as selected.

SPECIFICATION NO. 13
Enamel Paint for Radiators

First Coat—Wallhide Interior First Coater, each gallon reduced with 2 pints of Leptyne or Turpentine.

Second Coat (Optional)—Wallhide Interior Wall Paint, shade as selected, *or* Waterspar Quick-Drying Enamel, Gloss, shade as selected.

SPECIFICATION NO. 14
Enamel Paint for Exterior Surfaces—Wood—Normal Exposure

Banzai Enamel—*First Coat*—Snolite, each gallon reduced with 1¼ gallon Raw Linseed Oil, ¼ gallon Turpentine, ¼ pint Compo Drier.

Second Coat—Snolite, each gallon reduced with ⅜ gallon Raw Linseed Oil, ⅜ gallon Turpentine, ¼ pint Compo Drier.

Third Coat—Banzai Enamel, Gloss or Eggshell.

Fourth Coat—Banzai Enamel, Gloss or Eggshell.

SPECIFICATION NO. 15
Enamel Paint for Exterior Surfaces—Wood—Abnormal Exposure

Recommendations should be obtained from manufacturer to cover abnormal cases.

SPECIFICATION NO. 16
Enamel Paint for Exterior Surfaces—Wood Porch Floors and Canvas Decks

Florhide Enamel—THREE COAT WORK—*First Coat*—Florhide Enamel, shade as selected, each gallon reduced with ½ gallon of Pure Linseed Oil.

Second Coat—Florhide Enamel, shade as selected, each gallon reduced with ¼ gallon of Pure Linseed Oil.

Third Coat—Florhide Enamel, shade as selected, each gallon reduced with ¼ gallon of Pure Linseed Oil.

TWO COAT WORK—*First Coat*—Florhide Enamel, shade as selected, each gallon reduced with ½ gallon of Pure Linseed Oil.

Second Coat—Florhide Enamel, shade as selected, each gallon reduced with ¼ gallon of Pure Linseed Oil.

SPECIFICATION NO. 17
Enamel Paint for Exterior and Interior Surfaces—Cement Floors

Florhide Enamel—*First Coat*—Florhide Enamel, shade as selected, each gallon reduced slightly with Leptyne or Turpentine.

Second Coat—Florhide Enamel, shade as selected.

SPECIFICATION NO. 18
Enamel Paint for Interior Surfaces—Plaster, Concrete, and Brick Walls

Banzai Enamel—*First Coat*—Wallhide Interior First Coater, each gallon reduced with 2 pints of Leptyne or Turpentine.

For list of warehouses and map showing warehouses and factories see back cover.

See our Architectural Specification Book for detailed description of products mentioned above and for color charts.

Second Coat—Banzai Double Cover Undercoater, each gallon reduced with ¼ gallon Boiled Linseed Oil.

Third Coat—Banzai Double Cover Undercoater.

Fourth Coat—Banzai Enamel, Gloss or Eggshell, flowed on.

Wallhide Interior Semi-Gloss—*First Coat*—Wallhide Interior First Coater, each gallon reduced with 2 pints of Leptyne or Turpentine.

Second Coat—Sun-Glo Finish, shade as selected.

Third Coat—Wallhide Interior Semi-Gloss, shade as selected.

SPECIFICATION NO. 19

Enamel for Interior Surfaces—Wood Trim

Banzai Enamel—*First Coat*—Pitcairn Tector, each gallon reduced with ½ gallon of Leptyne or Turpentine, *or* Banzai Double Cover Undercoater, each gallon reduced with ¼ gallon Boiled Linseed Oil.

Second Coat—Banzai Double Cover Undercoater.

Third Coat—Banzai Enamel, each gallon mixed with 2 gallons of Banzai Double Cover Undercoater.

Fourth Coat—Banzai Enamel, Gloss or Eggshell.

Wallhide Interior Semi-Gloss—*First Coat*—Pitcairn Tector, each gallon reduced with ½ gallon of Leptyne or Turpentine.

Second Coat—Wallhide Interior Semi-Gloss Finish in shade desired.

Third Coat—Wallhide Interior Semi-Gloss Finish in shade desired.

SPECIFICATION NO. 20

House Paint for Exterior Surfaces—Wood—Normal Exposure

Sun-Proof Liquid Paint—THREE COAT WORK—(Non-Resinous or Resinous Woods)—*First Coat*—Wallhide Exterior Primer used according to directions on the package.

Second Coat—Sun-Proof Liquid Paint, shade as selected, each gallon reduced with 1 pint of Leptyne or Turpentine.

Third Coat—Sun-Proof Liquid Paint, shade as selected.

TWO COAT WORK—Apply first and third coats as specified above, omitting the second coat.

SPECIFICATION NO. 21

House Paint for Exterior Surfaces—Wood—Abnormal Exposure

Snolite—THREE COAT WORK—(Non-Resinous or Resinous Woods)—*First Coat*—Wallhide Exterior Primer, tinted with Oil Color to shade as selected, used according to directions on the package.

Second Coat—Snolite, tinted with Oil Color to shade as selected, each gallon reduced with ⅜ gallon Raw Linseed Oil, ⅜ gallon Turpentine, ¼ pint Pitcairn Compo Drier.

Third Coat—Snolite, tinted with Oil Color to shade as selected, each gallon reduced with ⅞ gallon Raw Linseed Oil, ⅛ gallon Turpentine, ¼ pint Pitcairn Compo Drier.

TWO COAT WORK—Apply first and third coats as specified above, omitting the second coat.

Note: When considerable amounts of Oil Colors are used, add proportionate amounts of Oil, Turpentine and Compo Drier.

SPECIFICATION NO. 22

Wall Paint for Interior Surfaces—Plaster and Wallboard Flat or Semi-Gloss

Wallhide System—TWO COAT WORK—*First Coat*—Wallhide Interior First Coater, each gallon reduced with Leptyne or Turpentine as directed on package. Tint with not to exceed one quart of Wallhide Interior Flat or Semi-Gloss of color selected for finishing coat. Allow to dry for 5 hours.

Second Coat—Wallhide Interior Flat or Semi-Gloss, shade as selected, or Flat White, Satin White or Stipple White.

THREE COAT WORK—*First Coat*—Wallhide Interior First Coater untinted, each gallon reduced with Leptyne or Turpentine as directed on the package. Allow to dry over night.

Second Coat—Use mixture of equal parts of Wallhide Interior First Coater and Wallhide Flat or Semi-Gloss of selected color. Reduce each gallon of mixture with two pints of Leptyne or Turpentine and brush out thoroughly.

Third Coat—Wallhide Interior Flat or Semi-Gloss, shade as selected, or Flat White, or Satin White or Stipple White. Use as directed on package.

SPECIFICATION NO. 23

Wall Paint for Metal Trim and Ceilings Flat or Semi-Gloss

Wallhide System—TWO COAT WORK—*First Coat*- Wallhide Interior First Coater, each gallon reduced with Leptyne or Turpentine as directed on package. Tint with not to exceed one quart of Wallhide Interior Flat or Semi-Gloss of color selected for finishing coat. Allow to dry for 5 hours.

Second Coat—Wallhide Interior Flat or Semi-Gloss, shade as selected, or Flat White, Satin White or Stipple White.

THREE COAT WORK—*First Coat*—Wallhide Interior First Coater untinted, each gallon reduced with Leptyne or Turpentine as directed on the package. Allow to dry over night.

Second Coat—Use mixture of equal parts of Wallhide Interior First Coater and Wallhide Flat or Semi-Gloss of selected color. Reduce each gallon of mixture with two pints of Leptyne or Turpentine and brush out thoroughly.

Third Coat—Wallhide Interior Flat or Semi-Gloss, shade as selected, or Flat White, or Satin White or Stipple White. Use as directed on package.

SPECIFICATION NO. 24

Wall Paint for Interior Surfaces—Plaster or Wallboard—Metal Trim and Ceilings Flat or Semi-Gloss

Wallhide System—*One Coat Repaint Work*—Touch up all plaster repairs and bare spots with Wallhide Interior First Coater. Reduced as directed on package. Allow to dry over night.

Finishing Coat—Wallhide Interior Flat or Semi-Gloss, shade as selected, or Flat White, or Satin White or Stipple White. Use as directed on package.

SPECIFICATION NO. 25

Industrial Wall Paint for Interior Surfaces—Plaster—Cement—Wood

Alba-Lux—*First Coat*—Alba-Lux Flat, each gallon reduced with ¼ gallon Boiled Linseed Oil.

Second Coat—Alba-Lux, Eggshell or Gloss.

Wallhide—*First Coat*—Wallhide Interior First Coater, each gallon reduced with 2 pints of Leptyne or Turpentine. Allow to dry over night.

Second Coat—Alba-Lux, Gloss, Eggshell or Flat.

SPECIFICATION NO. 26

Shingle Stain for Wood Shingles—New or Old Work

Tor-On Shingle Stain—*First Coat*—Tor-On Shingle Stain, shade as selected, each gallon reduced with ¼ gallon Boiled Linseed Oil (dipped for 15 minutes).

Second Coat—Tor-On Liquid Shingle Stain, shade as selected.

SPECIFICATION NO. 27

Cement Paint for Exterior Surfaces—Cement, Stucco and Brick Walls

Cementhide—THREE COAT WORK—*First Coat*—Wallhide Exterior Primer 101—White, or 102—Neutral, thinned to brushing consistency with Leptyne or Turpentine, not to exceed 2 pints to a gallon. Use no oil or other thinner than the above in this "Vitolized Oil" Paint.

Second Coat—Cementhide, each gallon thinned with about 1 pint of Leptyne or Turpentine.

Third Coat—Use Cementhide as it comes in the can.

TWO COAT WORK—*First Coat*—Wallhide Exterior Primer 101—White, or 102—Neutral, thinned to brushing consistency with Leptyne or Turpentine, not to exceed 2 pints to a gallon. Use no oil or other thinner than the above in this "Vitolized Oil" Paint.

Finishing Coat—Use Cementhide as it comes in the can.

Note: For Gloss Finish substitute Sun-Proof Liquid Paint for Cementhide.

For list of warehouses and map showing warehouses and factories see back cover.

See our Architectural Specification Book for detailed description of products mentioned above and for color charts.

SPECIFICATION NO. 28

Plastic Paint for Plaster, Concrete, Brick and Wood

Plastic Velumina—*First Coat*—Wallhide First Coater, each gallon reduced with 2 pints of Leptyne or Turpentine, Leptyne being preferred. Allow to dry over night.

Second Coat—Plastic Velumina applied with brush or plasterer's trowel.

Plastic Velumina on Keene's Cement Plaster—*First Coat*—Wallhide First Coater, each gallon reduced with 2 pints of Leptyne or Turpentine, Leptyne being preferred. Allow to dry over night.

Second Coat—Wallhide—First Coater, each gallon reduced with 2 pints of Leptyne or Turpentine, Leptyne being preferred. Allow to dry over night.

Third Coat—Plastic Velumina applied with brush or plasterer's trowel.

Velhide System—Pittsburgh Tiffany Wall Finishes—*First Coat*—Wallhide First Coater, each gallon reduced with 2 pints of Leptyne or Turpentine.

Second Coat—Wallhide Interior Wall Paint, reduced with equal parts of 28 Blending and Glazing Liquid. Spot and blend this mixture onto the wall; follow immediately by rolling loosely crumpled chamois over surface. (Do not apply undue pressure during rolling operation.) Roll chamois in varied directions to eliminate "pattern" effects. Wash chamois in turpentine frequently to remove paint.

SPECIFICATION NO. 29

Cold Water Paint for Interior Surfaces—Plaster and Wallboard

First Coat—Kalkomo Wall Size.

Second Coat—Kalkomo Wall Finish.

Note: For Acoustical Surfaces, or surfaces designed for sound-deadening, Kalkomo is ideal. Oil paints are not recommended because of their sealing properties, which tend to make the acoustical surfaces less porous and thus cause them to reflect sound instead of absorbing it.

SPECIFICATION NO. 30

Natural Varnish for Exterior Surfaces—Wood

Open Grain—*First Coat*—Pittsburgh Natural Paste Wood Filler, properly reduced with Leptyne or Benzine, brushed well into the grain.

Second Coat—Pitcairn Tector, each gallon reduced with ½ gallon of Leptyne or Turpentine.

Third, Fourth, Fifth Coats—200 Transparent Waterspar Quick-Drying Varnish.

SPECIFICATION NO. 31

Natural Varnish for Exterior Surfaces—Wood

Close Grain—*First Coat*—Pitcairn Tector, each gallon reduced with ½ gallon of Leptyne or Turpentine.

Second, Third, Fourth Coats—200 Transparent Waterspar Quick-Drying Varnish.

SPECIFICATION NO. 32

Stain and Varnish for Exterior Surfaces—Wood

Open Grain—*First Coat*—Pitcairn Oil Stain, shade as selected. (Refer to A.I.A. Document 25-B-1.)

Second Coat—Pitcairn Spirit Lacquer or Pure Shellac.

Third Coat—Pittsburgh Natural Paste Wood Filler, properly reduced with Leptyne or Benzine, brushed well into the grain.

Fourth, Fifth, Sixth Coats—200 Transparent Waterspar Quick-Drying Varnish.

SPECIFICATION NO. 33

Stain and Varnish for Exterior Surfaces—Wood

Close Grain—*First Coat*—Pitcairn Oil Stain, shade as selected. (Refer to A.I.A. Document 25-B-1.)

Second Coat—Pitcairn Spirit Lacquer or Pure Shellac.

Third, Fourth, Fifth Coats—200 Transparent Waterspar Quick-Drying Varnish.

SPECIFICATION NO. 34

Natural Varnish for Interior Surfaces—Wood Trim

Open Grain—*First Coat*—Pittsburgh Natural Paste Wood Filler, properly reduced with Leptyne or Turpentine, brushed well into the grain.

Second Coat—Pitcairn Tector, each gallon reduced with ½ gallon of Leptyne or Turpentine.

Third Coat—Pitcairn Aged Finishing Spar Varnish.

Fourth Coat—Natural—Pitcairn Aged Finishing Spar Varnish.

Dull—Pitcairn Dull or Satin Finish, *or* Pitcairn Aged Finishing Spar Varnish rubbed with pumice stone and rubbing oil.

Fifth Coat (Optional)—Natural—Pitcairn Aged Finishing Spar Varnish.

Note: Substitute Pitcairn Master Painter's Spar where economy is a factor.

SPECIFICATION NO. 35

Natural Varnish for Interior Surfaces—Wood Trim

Close Grain—*First Coat*—Pitcairn Tector, each gallon reduced with ½ gallon of Leptyne or Turpentine.

Second Coat—Pitcairn Aged Finishing Spar Varnish.

Third Coat—Natural—Pitcairn Aged Finishing Spar Varnish.

Dull—Pitcairn Dull or Satin Finish, *or* Pitcairn Aged Finishing Spar Varnish rubbed with pumice stone and rubbing oil.

Fourth Coat—Natural—Pitcairn Aged Finishing Spar Varnish.

Note: Substitute Pitcairn Master Painter's Spar where economy is a factor.

SPECIFICATION NO. 36

Wax Finish for Interior Surfaces—Wood Trim

Open Grain—*First Coat*—Pittsburgh Natural Paste Wood Filler, properly reduced with Leptyne or Turpentine, brushed well into the grain.

Second Coat—Pitcairn Aged Floor Spar.

Third Coat—Waterspar Wax, Paste or Liquid.

Fourth Coat (Optional)—Waterspar Wax, Paste or Liquid.

Note: Final coats polished by hand rubbing.

SPECIFICATION NO. 37

Wax Finish for Interior Surfaces—Wood Trim

Close Grain—*First Coat*—Pitcairn Aged Floor Spar.

Second Coat—Waterspar Wax, Paste or Liquid.

Third Coat (Optional)—Waterspar Wax, Paste or Liquid.

Note: Final coats polished by hand rubbing.

SPECIFICATION NO. 38

Stain and Varnish for Interior Surfaces—Wood Trim

Open Grain—*First Coat*—Pitcairn Wood Stain, shade as selected. (Refer to A.I.A. Document 25--B-1.)

Second Coat—Pitcairn Spirit Lacquer or Pure Shellac.

Third Coat—Pittsburgh Paste Wood Filler.

Fourth Coat—Pitcairn Aged Finishing Spar Varnish.

Fifth Coat—Natural—Pitcairn Aged Finishing Spar Varnish.

Dull—Pitcairn Dull or Satin Finish, *or* Pitcairn Aged Finishing Spar Varnish rubbed with pumice stone and rubbing oil.

Sixth Coat (Optional)—Natural—Pitcairn Aged Finishing Spar Varnish.

Note: Substitute Pitcairn Master Painter's Spar where economy is a factor.

SPECIFICATION NO. 39

Stain and Varnish for Interior Surfaces—Wood Trim

Close Grain—*First Coat*—Pitcairn Wood Stain, shade as selected. (Refer to A.I.A. Document 25-B-1.)

For list of warehouses and map showing warehouses and factories see back cover.

See our Architectural Specification Book for detailed description of products mentioned above and for color charts.

Second Coat—Pitcairn Spirit Lacquer or Pure Shellac.

Third Coat—Pitcairn Aged Finishing Spar Varnish.

Fourth Coat—Natural—Pitcairn Aged Finishing Spar Varnish.

Dull—Pitcairn Dull or Satin Finish, *or* Pitcairn Aged Finishing Spar Varnish rubbed with pumice stone and rubbing oil.

Fifth Coat (Optional)—Natural—Pitcairn Aged Finishing Spar Varnish.

Note: Substitute Pitcairn Master Painter's Spar where economy is a factor.

SPECIFICATION NO. 40

Stain and Wax for Interior Surfaces—Wood Trim

Open Grain—*First Coat*—Pitcairn Wood Stain, shade as selected. (Refer to A.I.A. Document 25-B-1.)

Second Coat—Pitcairn Spirit Lacquer or Pure Shellac.

Third Coat—Pittsburgh Natural Paste Wood Filler.

Fourth Coat—Waterspar Wax, Paste or Liquid.

Fifth Coat—Waterspar Wax, Paste or Liquid.

Note: Final coats polished by hand rubbing.

SPECIFICATION NO. 41

Stain and Wax for Interior Surfaces—Wood Trim

Close Grain—*First Coat*—Pitcairn Wood Stain, shade as selected. (Refer to A.I.A. Document 25-B-1.)

Second Coat—Pitcairn Spirit Lacquer or Pure Shellac.

Third Coat—Waterspar Wax, Paste or Liquid.

Fourth Coat (Optional)—Waterspar Wax, Paste or Liquid.

Note: Final coats polished by hand rubbing.

SPECIFICATION NO. 42

Natural Varnish for Interior Surfaces—Wood Floors

Hard Wood—Open Grain—*First Coat*—Pittsburgh Natural Paste Wood Filler.

Second Coat—Pitcairn Tector, each gallon reduced with ½ gallon of Leptyne or Turpentine.

Third Coat—Pitcairn Aged Floor Spar Varnish, or 100 Waterspar Quick-Drying Varnish.

Fourth Coat—Natural—Pitcairn Aged Floor Spar Varnish, *or* 100 Waterspar Quick-Drying Varnish.

Dull—Pitcairn Dull or Satin Finish, *or* Pitcairn Aged Floor Spar Varnish rubbed with pumice stone and rubbing oil.

Waterproof—Waterspar Transparent Varnish.

Fifth Coat (Optional)—Natural—Pitcairn Aged Floor Spar Varnish, *or* Waterspar Quick-Drying Varnish.

SPECIFICATION NO. 43

Natural Varnish for Interior Surfaces—Wood Floors

Hard and Soft Wood—Close Grain—*First Coat*—Pitcairn Tector, each gallon reduced with ½ gallon of Leptyne or Turpentine.

Second Coat—Pitcairn Aged Floor Spar Varnish, *or* 100 Waterspar Quick-Drying Varnish.

Third Coat—Natural—Pitcairn Aged Floor Spar Varnish, *or* 100 Waterspar Quick-Drying Varnish.

Dull—Pitcairn Dull or Satin Finish, *or* Pitcairn Aged Floor Spar Varnish rubbed with pumice stone and rubbing oil.

Waterproof—Waterspar Transparent Varnish.

Fourth Coat (Optional)—Natural—Pitcairn Aged Floor Spar Varnish, *or* 100 Waterspar Quick-Drying Varnish.

SPECIFICATION NO. 44

Wax Finish for Interior Surfaces—Wood Floors

Hard Wood—Open Grain—*First Coat*—Pittsburgh Natural Paste Wood Filler.

Second Coat—Pitcairn Aged Floor Spar Varnish.

Third Coat—Waterspar Wax, Paste or Liquid.

Fourth Coat (Optional)—Waterspar Wax, Paste or Liquid.

Note: Final wax coats polished by hand rubbing.

SPECIFICATION NO. 45

Wax Finish for Interior Surfaces—Wood Floors

Hard and Soft Wood—Close Grain—*First Coat*—Pitcairn Aged Floor Spar Varnish.

Second Coat—Waterspar Wax, Paste or Liquid.

Third Coat (Optional)—Waterspar Wax, Paste or Liquid.

Note: Final wax coats polished by hand rubbing.

SPECIFICATION NO. 46

Stain and Varnish for Interior Surfaces—Wood Floors

Hard Wood—Open Grain—*First Coat*—Pitcairn Oil Stain, shade as selected. (Refer to A.I.A. Document 25-B-1.)

Second Coat—Pitcairn Spirit Lacquer, *or* Shellac Wash Coat.

Third Coat—Pittsburgh Paste Wood Filler.

Fourth Coat—Pitcairn Aged Floor Spar Varnish, *or* 100 Waterspar Quick-Drying Varnish.

Fifth Coat—Natural—Pitcairn Aged Floor Spar Varnish, *or* 100 Waterspar Quick-Drying Varnish.

Dull—Pitcairn Dull or Satin Finish, *or* Pitcairn Aged Floor Spar Varnish rubbed with pumice stone and rubbing oil.

Waterproof—Waterspar Transparent Varnish.

Sixth Coat (Optional)—Natural—Pitcairn Aged Floor Spar Varnish.

SPECIFICATION NO. 47

Stain and Varnish for Interior Surfaces—Wood Floors

Hard and Soft Wood—Close Grain—*First Coat*—Pitcairn Oil Stain, shade as selected. (Refer to A.I.A. Document 25-B-1.)

Second Coat—Pitcairn Spirit Lacquer, *or* Shellac Wash Coat.

Third Coat—Pitcairn Aged Floor Spar Varnish, *or* 100 Waterspar Quick-Drying Varnish.

Fourth Coat—Natural—Pitcairn Aged Floor Spar Varnish, *or* 100 Waterspar Quick-Drying Varnish.

Dull—Pitcairn Dull or Satin Finish, *or* Pitcairn Aged Floor Spar Varnish rubbed with pumice stone and rubbing oil.

Waterproof—Waterspar Transparent Varnish.

Fifth Coat (Optional)—Natural—Pitcairn Aged Floor Spar Varnish.

SPECIFICATION NO. 48

Stain and Wax for Interior Surfaces—Wood Floors

Hard Wood—Open Grain—*First Coat*—Pitcairn Oil Stain, shade as selected. Refer to A.I.A. Document 25-B-1.)

Second Coat—Pitcairn Spirit Lacquer or Pure Shellac.

Third Coat—Pittsburgh Natural Paste Wood Filler.

Fourth Coat—Waterspar Wax, Paste or Liquid.

Fifth Coat (Optional)—Waterspar Wax, Paste or Liquid.

Note: Final wax coats polished by hand rubbing.

SPECIFICATION NO. 49

Stain and Wax for Interior Surfaces—Wood Floors

Hard and Soft Wood—Close Grain—*First Coat*—Pitcairn Oil Stain, shade as selected. (Refer to A.I.A. Document 25-B-1.)

Second Coat—Pitcairn Spirit Lacquer or Pure Shellac.

Third Coat—Waterspar Wax, Paste or Liquid.

Fourth Coat—Waterspar Wax, Paste or Liquid.

Note: Final wax coats polished by hand rubbing.

For list of warehouses and map showing warehouses and factories see back cover.

See our Architectural Specification Book for detailed description of products mentioned above and for color charts.

PITTSBURGH GLASS

PENNVERNON FLAT DRAWN WINDOW GLASS

Manufacture

The Pennvernon Process, developed and controlled by the PITTSBURGH PLATE GLASS COMPANY, produces glass which has many quality characteristics peculiar to Pennvernon Window Glass. Pennvernon Glass is absolutely flat, at no time from when the white molten sheet leaves the tank until it emerges from the vertical annealing oven does it depart from the perpendicular. This sheet has a flatness and brilliancy never before believed possible in a fire finished glass. The manufacture is supervised by the same organization which has made other products of the PITTSBURGH PLATE GLASS COMPANY standard throughout the world.

The results of this new process are plainly evident in the appearance of the glass itself. Pennvernon Window Glass has a new uniformity of quality—an unusual flatness of surface, clear transparency, and even thickness. Even more striking is the high lustre, the brilliant fire polish on both sides. There is no wrong side. Special methods of treating this product prevent staining and loss of lustre. Due to the perfect flatness of this window glass, it is easier to cut, either side may be glazed outward, breakage is reduced to a minimum and time is saved in the glazing operation. Pennvernon Window Glass, with the surface unmarred by bending or refractories, embodies the last word in modern methods of window glass manufacture.

Thickness

Tolerances in thickness of single and double strength Pennvernon Window Glass conform to the U. S. Government standards of 10½ to 11½ lights to the inch, or approximately 3/32 in. for single; and 7½ to 8½ lights to the inch, or approximately ⅛ in. for double. Pennvernon Glass is also available in 3/16 and 7/32-in. thicknesses, known as Pennvernon Heavy Sheet Glass.

Qualities

Pennvernon Window Glass is graded in accordance with U. S. Government standards:

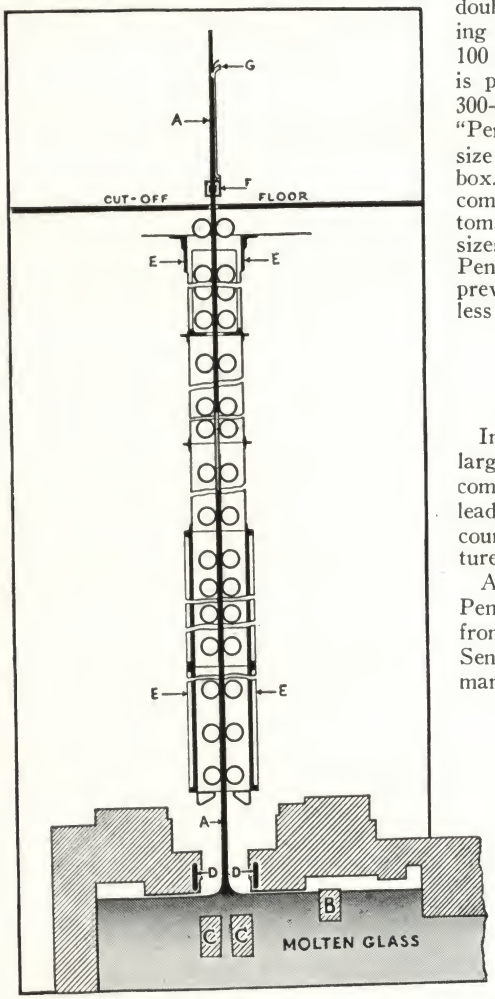
A—The highest grade for regular commercial use. Contains no defects to perceptibly interfere with straight vision. The central area of the sheet is to be practically free of defects.

B—Glass free from pronounced defects but may contain the same kind of defects as A quality, only larger, heavier and more numerous.

AA—The best quality obtainable in window glass. This quality is higher than commercially necessary, and is available only in limited quantities.

Steel Sash—Specially selected for the requirements of industrial and factory buildings. Defects so located as not to obstruct light transmission. Available in sizes 14 x 20 and 12 x 18 only.

Greenhouse—A special quality selected to eliminate defects injurious to growing plants. Available in sizes 16 x 18, 16 x 24, and 18 x 20 only.

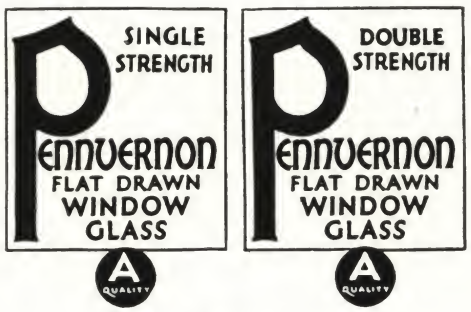


Cross Section of Glass Machine Showing the Sheet of Glass Being Drawn

A-A—The sheet of glass. B—Skim bar. C-C—Draw bar. D-D—Water coolers to chill the sheet. E-E—Machine case. F—Cut-off wire. G—Edge cut-off. O-O—Asbestos-covered rolls.

Labels

The Pennvernon label (red for "A" Quality and Royal Purple for "B" quality for both single strength and double strength) identifies a superior product. Pennvernon Heavy Sheet Glass is identified by a yellow label with the quality imprinted thereon.



Packing

Pennvernon Window Glass is packed with a special paper between each light to preserve its brilliant lustre. Single and double strength are shipped in boxes containing 50 sq. ft. in sizes up to 100 united in. and 100 sq. ft. in larger sizes. Heavy Sheet Glass is packed in 50-ft. boxes for cut sizes and 300-ft. boxes for stock sheets. The name "Pennvernon", the quality, thickness and size are clearly stenciled on one end of the box. Boxes are constructed of the best commercially dry lumber with heavy bottoms on larger sizes and cleats on smaller sizes which insure strength with light weight. Pennvernon Glass is carefully packed to prevent damage in transit or through careless handling.

Additional Information

Immediate deliveries are obtained on large as well as small orders through the company's numerous warehouses located in leading industrial centers throughout the country; through sash and door manufacturers and leading glass jobbers.

Additional literature and information on Pennvernon Window Glass may be secured from our warehouse serving your territory. Send for attractive book describing the manufacture of this Window Glass.

Specifications

Use the following paragraph to insure the highest grade:

"Except where otherwise specified, or indicated on plans, all openings shall be glazed with "A" quality double strength labelled Pennvernon Window Glass. All labels shall remain on the glass until approved by the architect.

"All glass shall be properly set, well sprigged, puttied and back puttied with the best oil putty. When metal sash is used, glaze with the best Steel Sash Putty."

For complete information, glossary of terms and U. S. Government specifications for Plate Glass refer to the index for the Plate Glass Manufacturers of America pages.

For list of warehouses and map showing warehouses and factories see back cover.

VISTA PLATE GLASS
The Thin Polished Plate Glass



Plate Glass in residences, apartments, hotels, schools, hospitals and office buildings is universally regarded as a mark of distinction. It definitely adds to the appearance of the structure, enhances its value and makes the sale or rental easier. For many years the lightest plate glass obtainable was ¼ in. in thickness and any building glazed with plate glass required sash larger than the standard 1⅜-in., together with heavier window weights, to provide for the additional thickness and weight of plate glass. Vista Plate is a polished plate glass of the same approximate thickness as double strength window glass. Vista Plate therefore eliminates the largest obstacle confronting architects who wish to specify plate glass for residence work, for it allows the use of standard 1⅜-in. sash and ordinary window weights. Now the perfect vision, the polished surface and the perfect reflection of plate glass may be had by using Vista Plate and standard 1⅜-in. sash.

High Quality

Vista Plate is the result of a long period of experimentation in which the PITTSBURGH PLATE GLASS COMPANY spent millions of dollars to develop a thin polished plate glass at a cost which permitted its use. The quality of Vista Plate is equal in every respect to that of heavier plate glass. It has two plane parallel surfaces, very highly polished and free from waves and other defects present in common window glass. With the exception of weight the same arguments can be advanced for the use of Vista Plate as for regular thickness.

A Good Investment

The use of Vista Plate in modern homes, schools, apartments, hotels, hospitals and office buildings, in fact in all openings of ordinary dimensions where ¼-in. plate glass is unsatisfactory, is not only desirable, but essential, if the exterior appearance of the structure and the comfort of the occupant or tenant is taken into consideration.

It is hardly consistent to specify with care and precision various other building materials and at the same time to permit the use of glass which does not give the maximum of efficiency and beauty. The occupant of a residence or building glazed with Vista Plate may look out and get a faithful interpretation of objects as they actually appear, not distorted or marred. The observer looking at a structure glazed with Vista Plate cannot fail to discern the clarity of reflections, which add materially to the appearance of the building. The difference between the cost of glazing a building with Vista Plate and that of glazing it with common window glass is surprisingly small, the extra charges incidental to using plate glass, having as shown above, now been eliminated.

Specifications

To specify Vista Plate, use the following paragraph:

All glass, except as otherwise specified, shall be Vista Plate, Glazing Quality, the thin polished plate glass manufactured by the PITTSBURGH PLATE GLASS COMPANY. Each light shall be identified by the manufacturer's label which is to remain on the glass for the architect's inspection. All glass shall be properly set, well sprigged, puttied and back puttied with the best oil putty; when metal sash is used glaze with best steel sash putty.



Internal Revenue Building, Washington, D. C., Glazed throughout with Vista Plate Glass, the partitions of Tapestry Glass, from plans drawn by Supervising Architect's office

Facts to Remember About Vista Plate Glass

Thickness: 6 9/64 ins. (glazed in standard 1⅜-in. sash).

Weight: 1.46 lbs. per sq. ft.

Sizes: Up to 72 x 130 ins. (sizes over 7 sq. ft. in area not recommended for exterior glazing).

Quality: True, lustrous surface, equal in every respect to ¼ or 3/16-in. product, thickness excepted.

Source: Full stocks carried at any of our sixty-seven eastern warehouses. Stocked by W. P. Fuller & Company warehouses on the Pacific Coast.

FLESH TINTED PLATE GLASS

Plate glass is being used, today, in many ways which would not have been practical or effective a few years ago. The increasing number of uses results from the realization that plate glass is more than utilitarian—that it can be used for decoration—to lend beauty, dignity and to produce special effects. The Research Laboratories of the PITTSBURGH PLATE GLASS COMPANY have after much study developed a flesh tinted plate glass which has recently been offered to the trade.



Description

Flesh tinted plate glass is approximately the same color as the skin of a normal Caucasian. The color is very light in surface section, but quite intense in transverse section. When used as a table top or desk top Flesh Tinted Plate Glass brings out the full beauty of walnut, mahogany or similar grained woods. When used in mirrors it has a very highly decorative value which gives a flattering picture of the image reflected. Moreover such mirrors have the very unusual quality of emphasizing the flesh colors while minimizing the blues and violets, thus giving one the appearance of excellent health.

Uses—For Mirrors, Table Tops or Desk Tops. Of special value for built-in appointments.

Quality—Selected quality only.

Thickness—13/64 in. plus or minus usual tolerance of 1/32 in.

Size—Up to 25 sq. ft., larger sizes subject to factory stock.

Strength—Equivalent to plate glass of equal thickness.

Weight—2⅝ lbs. per sq. ft.

Samples—Both clear and silvered samples furnished upon request.

Specifications

To specify Flesh Tinted Plate Glass use the following paragraph:

Wherever shown on the drawings or details glass shall be Flesh Tinted Plate Glass as manufactured by the PITTSBURGH PLATE GLASS COMPANY. Each light shall be identified by the manufacturer's label which is to remain on the glass for the architect's inspection.

For complete information, glossary of terms and U. S. Government specifications for Plate Glass refer to the index for the Plate Glass Manufacturers of America pages.

For list of warehouses and map showing warehouses and factories see back cover.

WATER WHITE PLATE GLASS

Water White Plate Glass, due to its high transmission of violet and blue light, either as clear glass or in mirror form, does not change the appearance of objects viewed through it. Such objects appear entirely natural, each color bearing its normal relation to the other in intensity of tone and shade.

Water White Plate Glass is a pure White Glass, colorless both in surface and transverse section. Its transmission value for all the several colors of the spectrum is very nearly uniform (88% to 92%), and it is this high transmission in the blue and violet portions of the spectrum which particularly distinguishes it from commercial plate glass.

Uses—Especially suitable for use in display cases for stores and museums when it is essential to transmit delicate shades of color through the glass without changing their true relative intensities. Also most suitable for mirrors to be used where it is desired to obtain as nearly true reflectances as possible.



Quality—Selected quality only.

Thickness—13/64-in. with tolerance of plus or minus 1/32-in.

Sizes—Up to 25 sq. ft. Larger sizes subject to factory stock.

Weight—2⅔ lbs. per sq. ft.

Strength—Equivalent to plate glass of equal thickness.

Samples—Both clear and silvered samples furnished upon request.

Specifications

To specify Water White Plate Glass use the following paragraph:

Whenever shown on drawings or details, glass shall be Water White Plate Glass as manufactured by the PITTSBURGH PLATE GLASS COMPANY. Each light shall be identified by the manufacturer's label which is to remain on the glass for the Architect's inspection.

HEAVY PLATE GLASS

Smart Beautiful Modern

THE GLASS OF A HUNDRED USES

This is an age of simplicity of design, or straight lines and sweeping curves, of steel and glass. Today, plate glass is being used in many ways undreamed of a few years ago. This multiplication of uses has sprung from a growing realization that this product is more than a mere substance to be used for glazing windows and store fronts, and for mirrors—that it is in addition a medium that can be utilized very successfully for decoration.



In the construction of Radio Acoustic Chambers and Control Rooms, Heavy Plate Glass is ideal for walls or windows

Many owners of homes, offices, banks, theatres, stores and hotels are finding that plate glass serves practical uses, better than other materials, and most important of all, lends greater beauty, dignity and a modern atmosphere to the furniture or fixtures in which it is the dominant material.

To meet this demand the PITTSBURGH PLATE GLASS COMPANY has revolutionized its processes to permit quantity production of heavy plate glass, which is particularly adaptable to uses of this type. It is clear and affords perfect vision. It has brilliant and mirror-like smoothness of surface which only the finest plate glass can have. It is impervious to moisture and weather, to dirt and deterioration. It fits itself into any plan or design by its very unobtrusiveness.

Uses—Book Shelves, Decorative Panels and Partitions, Shower Bath Enclosures, Bank Fixtures (Deal Plates), Glass Roofs, Glass Flooring, Porte Cochere Roofs, Skylights, Semi-enclosed Telephone Booths, Theatre Marquises, Valances, Lighting Fixtures, Radio Acoustic Chambers, Refrigerator Doors, Show Cases, Soda Fountain Counters, Aquariums, Aquatic Tanks, Bulkheads, Counter Tops, and Mausoleums.



Heavy Plate Glass is an unusually good looking and practical material for Bank Deal Plates

Quality — Regular Commercial quality.

Thickness—⅜ to 1¼ in.

Size—⅜ to ¾ in.; 72 x 160; ⅞ to 1 in.; 66 x 130; 1 to 1¼ in.; 60 x 130.

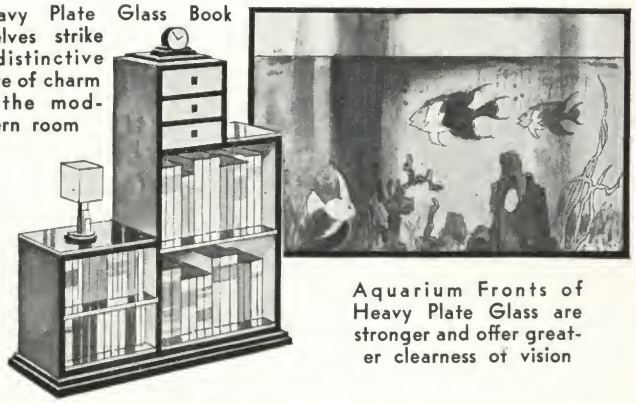
Strength—In direct proportion to thickness, as compared with ¼ in.

Specifications

To specify Heavy Plate Glass use the following paragraph:

Wherever shown on the drawings or details, glass shall be Heavy Plate Glass as manufactured by the PITTSBURGH PLATE GLASS COMPANY. Each light shall be identified by the manufacturer's label which is to remain on the glass for the Architect's inspection.

Heavy Plate Glass Book Shelves strike a distinctive note of charm in the modern room



Aquarium Fronts of Heavy Plate Glass are stronger and offer greater clearness of vision

For complete information, glossary of terms and U. S. Government specifications for Plate Glass refer to the index for the Plate Glass Manufacturers of America pages.

For list of warehouses and map showing warehouses and factories see back cover.

SAFETY GLASS

Multiplate Bullet Proof Plate Glass—Duplate—Duolite—Aerolite Safety Glass

Multiplate Bullet Proof Glass is a safety glass for banks which affords protection against side arms. It has all the desirable qualities of plate glass for it is made of three layers of plate glass and in addition affords positive protection against bandits' bullets. The core of this glass is a very heavy plate to which thinner plates are laminated on both sides. This gives a double resistance to shattering.



Multiplate Bullet Proof Glass is made in thicknesses from ⅞ to 1¼ in. Multiplate 1⅛ in. thick, marked Multiplate 9/8 in. has been inspected and approved by Underwriters' Laboratories for use in bandit resisting enclosures. Multiplate is also used in armored cars. The word "Multiplate" or Multiplate 9/8 in. is etched in the corner of each piece of genuine Multiplate.

Duplate—Duolite—Aerolite—Safety Glass

Duplate Safety Plate Glass is primarily intended for automobiles, and other traction vehicles. It is also used in buildings for many purposes such as elevator doors, swinging doors, display cases and machinery guards. The words Duplate Safety are etched in the corner of each piece of genuine Duplate Safety Plate Glass.

Safety Glass is also made in two lighter weights called Duolite and Aerolite. These products are designed especially for busses and aeroplanes.



For complete information, glossary of terms and for the U. S. Government specifications refer to the index for the pages of the Plate Glass Manufacturers of America.

PITTSBURGH COPPER BACK MIRRORS—GENUINE ELECTRO COPPER PLATED

Pittsburgh Copper Back Mirrors are *all purpose mirrors.* Mirrors are now obtainable, manufactured by the PITTSBURGH PLATE GLASS COMPANY, guaranteed against deterioration from climatic or atmospheric conditions and defective workmanship. These are electro copper plated mirrors and in case of deterioration they will be resilvered and recopper-plated free of charge.

Wherever mirrors are used—for decoration or utility, Pittsburgh Copper Back Mirrors will give *greater satisfaction.*

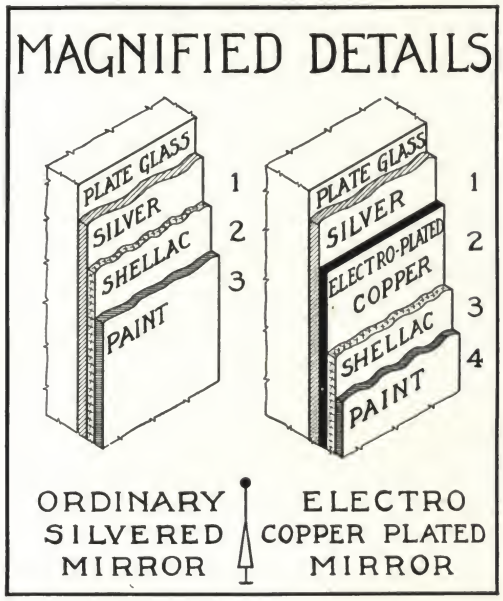
A Few of Their Many Uses

For
- Doors
- Walls
- Lobbies
- Fixtures
- Furniture
- Bathrooms

In
- all public buildings
- barber shops
- beauty shops
- hotels
- hospitals
- restaurants
- residences
- resort piers
- stores
- ships
- theatres

Particularly adapted for *marine use* and for River and Lake going vessels.

Wherever an installation of lasting beauty is required, *Pittsburgh Copper Back Mirrors* are recommended—*they stay brilliant permanently.*



Method of Manufacture

Pittsburgh Copper Back Mirrors receive a double coat of silver and on this a layer of copper is electrolytically deposited, followed by an application of pure shellac and a coat of an especially prepared mirror backing paint. Mirrors fabricated by this process are impervious to the most severe climatic conditions—they are *sheathed in copper.*

General Information

A slightly higher initial cost is justified by the saving in upkeep effected through elimination of the cost of removing, resilvering and reinstalling ordinary silvered mirrors on which the silvering frequently becomes defective in a relatively short time. Pittsburgh Copper Back Mirrors do not cloud, streak or discolor and represent true economy.

Compare the magnified cross sections of the copper back mirror which is electro copper plated with the old type of silvered mirror, and note the insulating metal between the porous coating of the paint and the sensitive silver.

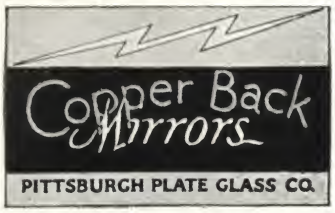
Specification

To insure obtaining mirrors which will be permanently of the highest quality, the following specifications should be used:

Wherever mirrors are shown on the drawing they shall be Copper Back—Genuine Electro Plated Mirrors manufactured by the PITTSBURGH PLATE GLASS COMPANY. Mirrors to be of the quality and thickness specified in detail on plan. All mirrors to bear the manufacturer's label until approved and accepted by the architect.

Identification

Look for the label shown at the right on all Pittsburgh Copper Back Mirrors. It is your assurance that you are installing a mirror that will outlast the other fixtures.



Sizes

Can be furnished in all sizes up to and including 70 x 144 in.



Men's Barber Shop, Famous Barr Co., St. Louis, Mo.

For list of warehouses and map showing warehouses and factories see back cover.

TAPESTRY GLASS

Tapestry Glass is an ornamental or decorative glass of unusual merit. Tapestry Glass, as the name infers, has a beautiful richness of texture. A special, exclusive process produces the surfaces of Tapestry Glass and gives them a silvery, satin-like finish, and a depth resembling fine Tapestries. Immediately beneath this gleaming surface, Tapestry Glass is perfectly clear with all the excellence of the finest Plate Glass.

Quality

Tapestry Glass has all the qualities and advantages of an opaque glass with the added features that it is translucent and semi-transparent. If you were to hold some object close against the back of a piece of Tapestry Glass, you would be surprised to find this glass transparent, almost as much so as ordinary plate glass. But move the object away—even a few inches—and the transparency disappears. At a short distance outlines are lost. And, as the object moves farther away, it disappears into scarcely more than a shadow, unless by chance a very sharp focus of light rests upon it.

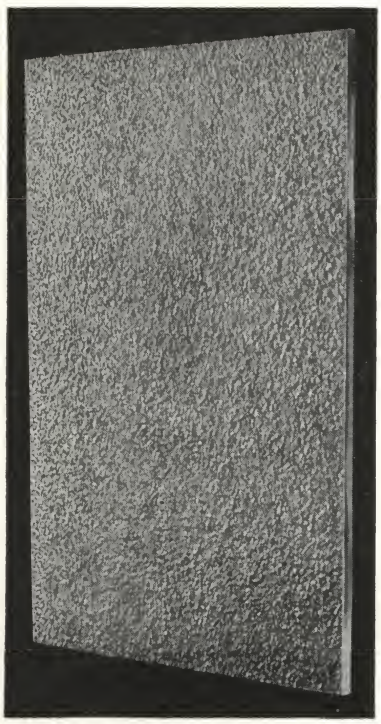
Tapestry Glass has a certain Quality perhaps best described by the adjective *alive*. When light plays on its surface or through it, Tapestry Glass becomes almost vibrant. It has a silvery sheen, unlike any glass to which the trade has ever been accustomed. A glowing depth, which transparent glass—the surface of which has been merely pressed into a pattern, of course, does not possess.

Decorative Treatment

Tapestry Glass invites many interesting, novel treatments. It may be beautifully decorated in a number of designs, sand-blasted, chipped or mitered upon the surface. Names, trade-marks, emblems and numbers also look remarkably well when executed in this manner.

Advantages

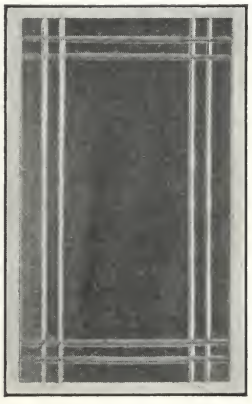
The advantages of Tapestry Glass are many and obvious. It transmits and diffuses the maximum amount of light; yet it obstructs and obscures vision. It is semi-opaque when used in office partitions, in windows or doors and is ideal for shutting out an undesirable view, without sacrificing light. In stores it may be used for side or rear windows and is also used to replace prism glass above show windows. Tapestry Glass is particularly suitable for fan lights, side lights, transoms, front doors and windows in residences. In churches, banks, fraternal organizations, offices, schools—wherever a flood of clear light is necessary and privacy desirable—Tapestry Glass should be used.



Plain Tapestry Glass



Sand-blasted Border, Clear Field



Satin Finish Miters, Clear Field

Sizes and Thickness

Tapestry Glass is made in two thicknesses 3/16 and ¼ in. in sizes up to 72 x 170 ins. It may be obtained with the Tapestry finish on both sides in either thickness, or with one surface Tapestry and one surface polished in the ¼-in. thickness. This product is designated as Polished Tapestry Glass.

Polished Tapestry Glass

Polished Tapestry Glass has one Tapestry Glass surface while the other is ground and polished with the same care as the finest Polished Plate Glass.

Polished Tapestry Glass is especially suitable for use in corridors and in exterior elevations of buildings in conjunction with Polished Plate Glass since it presents an unbroken highly polished surface, giving true reflections. The obscuring and diffusing properties are imparted by the Tapestry surface on one side of the glass.

Strength

The tensile strength of both Tapestry Glass and Polished Tapestry is equivalent to or greater than Plate Glass of equal thickness.

Specifications

To ensure obtaining genuine Tapestry Glass the following specification should be used:

All door lights, transom lights, partition lights and other openings so indicated on the plans, shall be Tapestry Glass (state whether plain or polished) manufactured by the PITTSBURGH PLATE GLASS COMPANY. Glass shall be glazed in the best approved manner and left whole upon completion of the job. Each light shall be identified by the manufacturer's label which is to remain on the glass for the architect's inspection.

Samples, Information, Etc.

Complete information and samples of Tapestry Glass may be obtained from any warehouse of the PITTSBURGH PLATE GLASS COMPANY, conveniently located in all the principal cities of the United States. A catalogue fully describing both Tapestry Glass and Polished Tapestry Glass and their many and varied uses will be furnished architects, contractors, etc., upon request.

For complete information, glossary of terms and U. S. Government specifications for Plate Glass refer to the index for the Plate Glass Manufacturers of America pages.

For list of warehouses and map showing warehouses and factories see back cover.

EASYSET METAL STORE FRONT CONSTRUCTION

EASYSET STORE FRONTS

Products

Also Awning Covers, Kick Plates, Thresholds, Special Mouldings, Show Case Doors, Grilles, Ornamental Store Front Construction and "H" (Heavyweight) Store Front Construction.

Modern Design

The lineation of Easyset construction is modern, though not extreme. Sharp contrasts in light and shadow are obtained through definite and angular mouldings. Absence of superfluous material and embellishment lends to each unit the desirable qualities of distinction and grace. Though amply strong, glass-holding members are reduced to minimum size, thus providing a setting that is unobtrusive to the display of merchandise.

Simple Construction

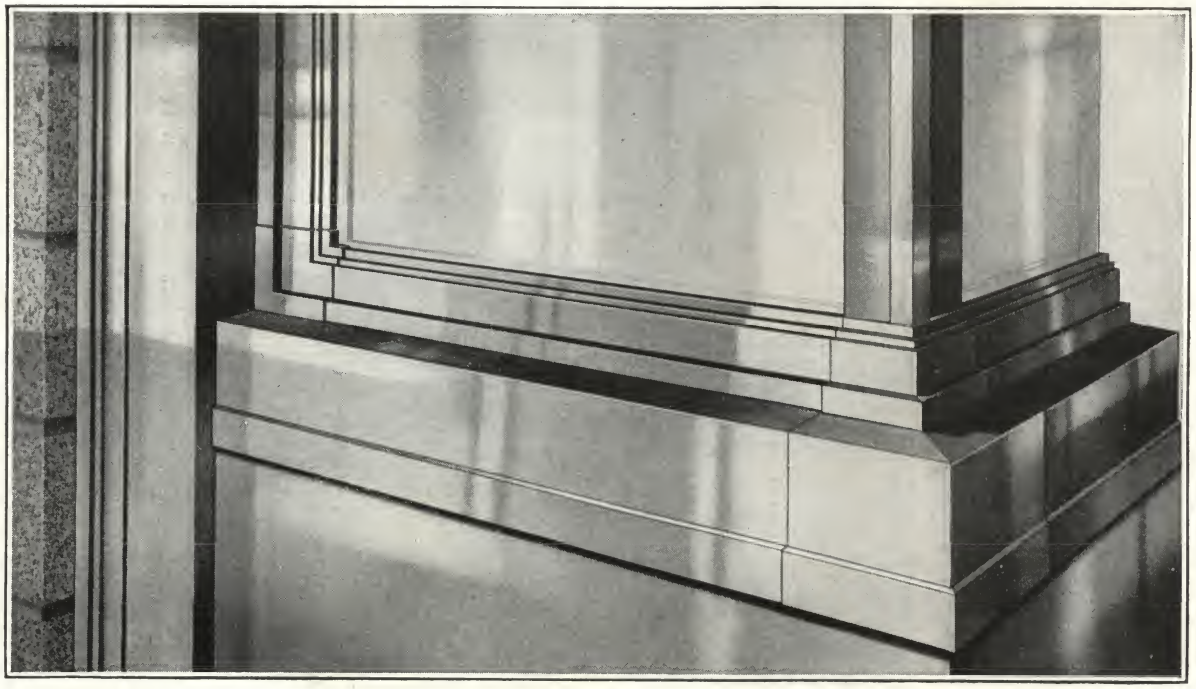
Wherever possible, metal coverings are made to conform to wood cores of standard sizes, thus reducing costs and installation difficulties. With added improvements, the original principle of uniting face and back members has been maintained.

True to name, Easyset Store Fronts are easily and quickly installed.

Easyset "H" construction is made from heavier gauge metal than that used in the regular construction. Ultra-smart in effect, it is suitable for the finest shops on the street. Contours are shown on the opposite page.

Catalogue and Full Size Details

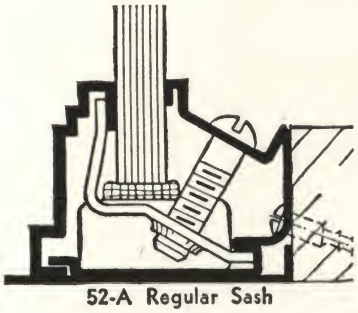
Our 32-page catalogue "M" shows the complete Easyset System of Metal Store Fronts, with illustrations and details of the various members. Write for your copy. A portfolio of full size working details will be included for the asking. "Modern Store Fronts by Easyset" is a free portfolio of some outstanding installations of recent date. This is file-size and bears the A. I. A. file number, the same as the brochures mentioned above.



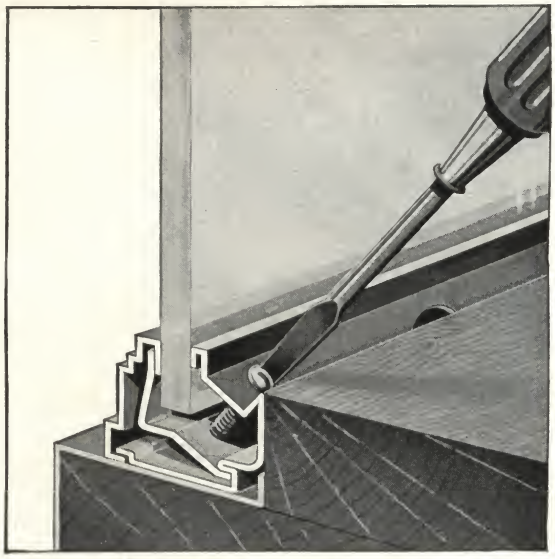
Modern Lines Are Exemplified in New "Easyset" Units

The sharp, clean-cut lines of this construction make it extremely desirable for the modern shops

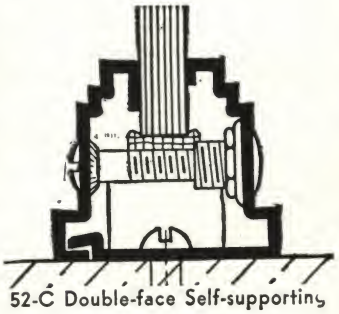
For list of warehouses and map showing warehouses and factories see back cover.



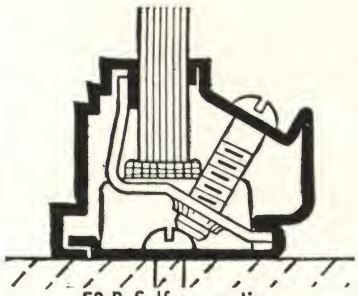
52-A Regular Sash



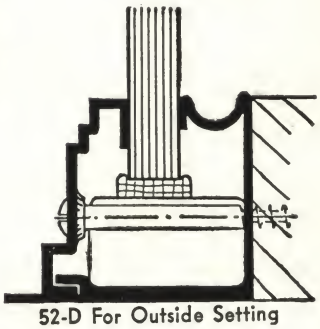
Method of Adjusting Sash from the Inside



52-C Double-face Self-supporting



52-B Self-supporting



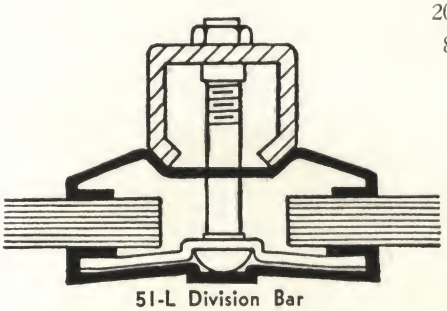
52-D For Outside Setting

"EASYSET" SASH AND BARS

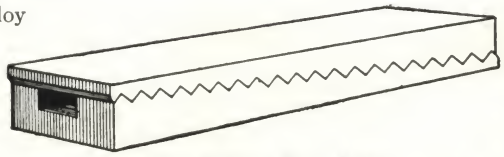
(Full Size Details)

Made of solid bronze or aluminum alloy in the following finishes (specify by number):

17—Satin Bronze
20—Unfinished Bronze
8—Polished Bronze
9—Light Statuary on Bronze
21—Dark Statuary on Bronze
18—Polished Aluminum Alloy
19—Satin Aluminum Alloy



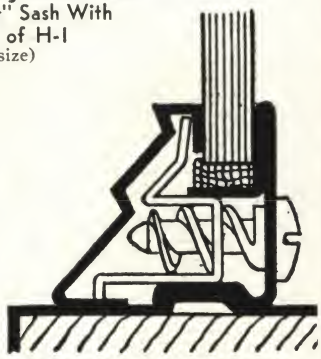
51-L Division Bar



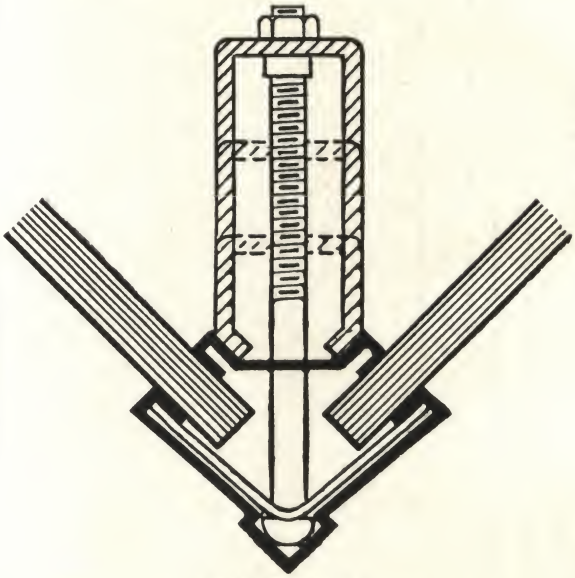
Adjustable Setting Block Used on All "Easyset" Sash With Exception of H-1
(Actual size)

"H" Construction

Designed for architects desiring a slightly heavier construction. Modern in treatment, the entire assembly has an appearance of unity and distinction worthy of the finest store front installation. Write for complete full size details of "H" construction.

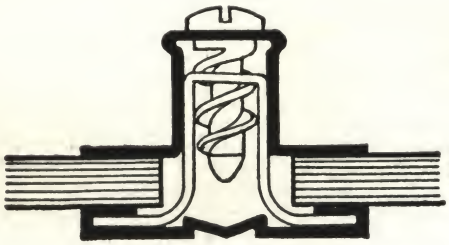


H-1 Sash



54-H Corner Bar

Also showing in dotted lines Light (L), Medium (M) stiffeners as used on all bars, with the exception of "H" Construction members. Also furnished with special reinforcing member if specified. (Specify by letter)



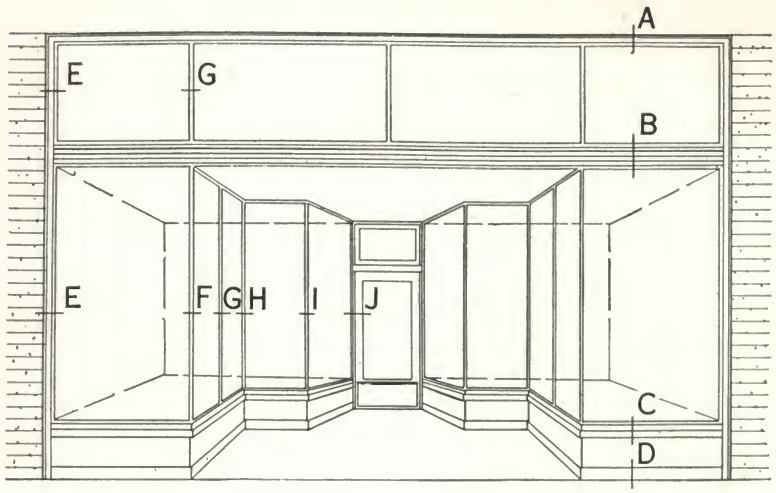
H-3 Division Bar



H-2 Corner Bar

(Special stiffeners furnished for these bars if specified.)

For list of warehouses and map showing warehouses and factories see back cover.



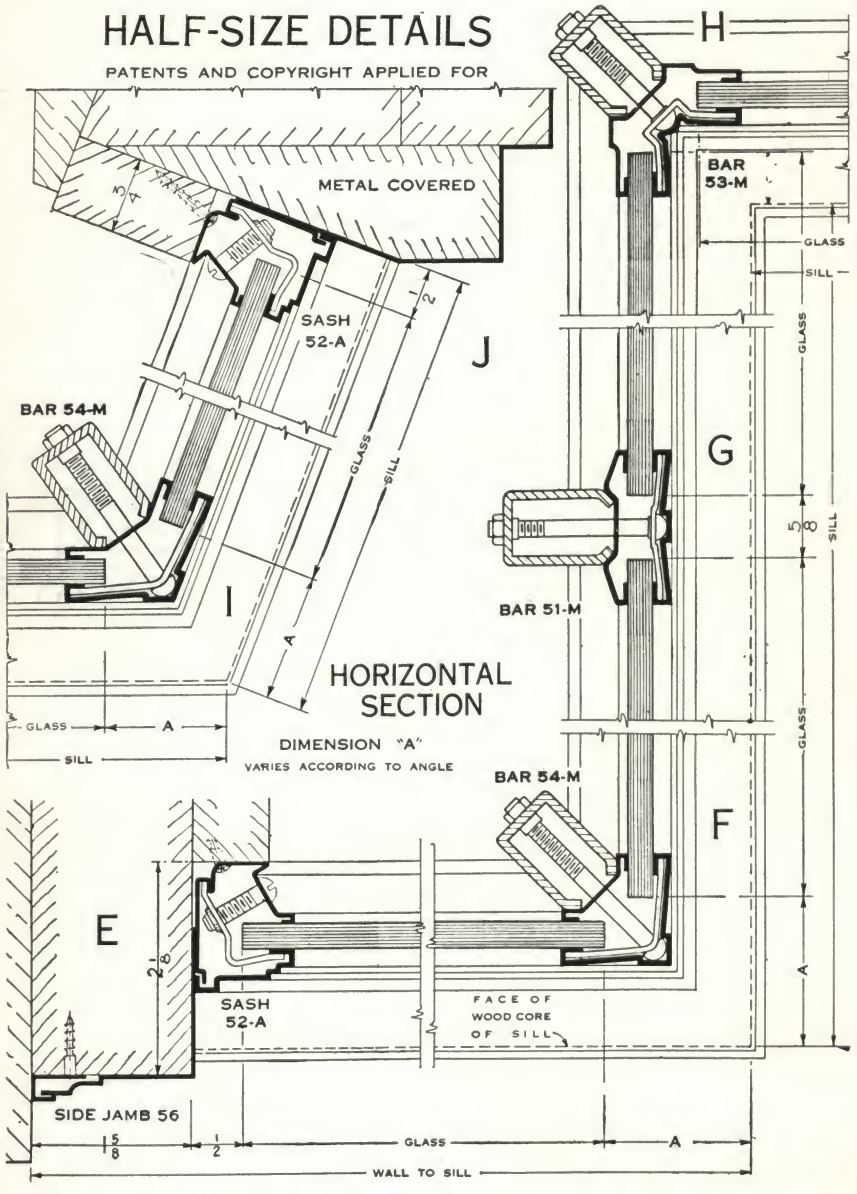
Note: Keyed elevation shows position of various members detailed on this page. Light stiffener is used at "G" in transom.

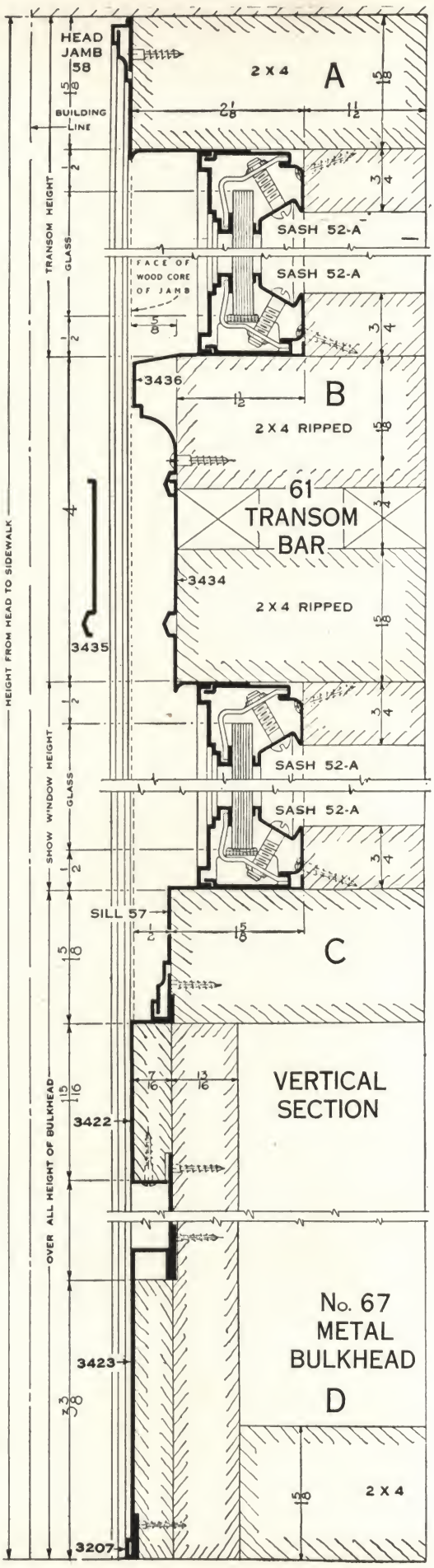
A Complete "Easyset" Store Front

The accompanying details show manner of building a typical "Easyset" Store Front. A diversity of treatment is possible with "Easyset" members. Our services are at your disposal when designing a store front.

HALF-SIZE DETAILS

PATENTS AND COPYRIGHT APPLIED FOR





For list of warehouses and map showing warehouses and factories see back cover.

CARRARA STRUCTURAL GLASS

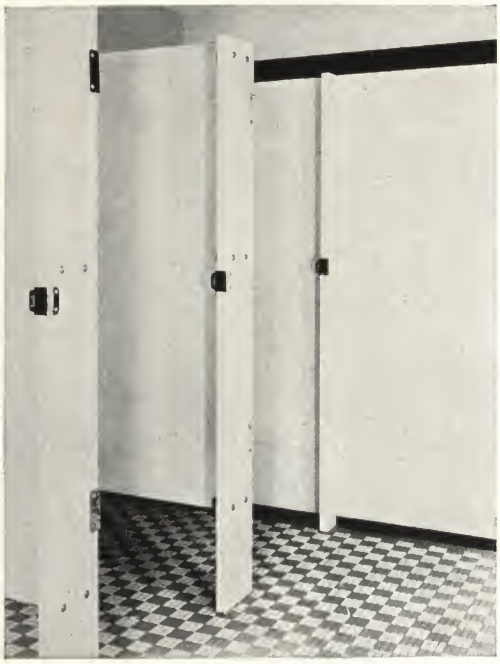
Carrara is a Structural Glass having advantages not possessed by other similar materials. It is cast in flat slabs, and has as one of its chief characteristics a mechanically ground and polished surface. A glass to which minerals have been added to impart a permanent color and other desirable properties, such as low expansion, strength and resistance to thermal shock.

After Carrara is cast and comes from the annealing lehr it has a hard glossy surface which is known as "Firepolished". A large amount of Structural Glass is shipped without further finishing, but Carrara goes through another important operation of grinding and polishing for several reasons.

First: This accounts for the fact that Carrara is flat as only ground and polished Structural Glass can be flat. A satisfactory installation will never result from the use of warped glass. For the same reason the surface of Carrara shows no ripple or waves. Reflections are clear and undistorted.

Second: When any Structural Glass is rolled and left in the firepolished state, it has a chilled upper crust or skin which has a different structure from the body of the slab. Uneven stresses are set up which often cause breakage. In Carrara you receive only the uniform center core since the original surface has been removed.

Third: The surface imparted to firepolished Structural Glass in the manufacture is shiny, uninteresting and without any depth or richness, and not the true color of the slab. By removing this surface, the true uniform color is brought out, which, together with the finer texture developed by the mechanical grinding and polishing operation, produces a finish not approached by any competitive material. A mechanical grinding and polishing operation is the only practical method by which slabs polished on both sides may be obtained. This is a very definite advantage in certain types of toilet room work.



1 1/32-In. Carrara Ashlar Wainscoting with Carrara Stiles and Partitions

Colors

Carrara colors are popular ones—soft and pleasing. Therefore, they may be used together to make harmonious combinations. Carrara colors are not the result of chance. They are permanent and uniform. Carrara may be obtained in Ivory and Jade, and also Black and White.

Thicknesses and Finish

All colors of Carrara are made in the following thicknesses:
1 1/32, 7/16, 3/4, 7/8 and 1 1/4 ins.,
and in addition Black is also made in 1/4-in. thickness, a useful size for glazing obscure windows or spandrels. These thicknesses are all made polished on one side, and in addition 7/8 and 1 1/4-in. thicknesses may be obtained with polished finish on both sides. When polished one side material is furnished, the reverse side is flat, but has a more or less rough texture or markings made by the table on which it is cast. Carrara can also be furnished with a honed finish, which is a satin-like finish obtained before the final polishing operation has been completed. This finish has a particular application where Carrara is used for deal plates, or any place where it is subject to hard wear. A honed finish does not change its character when subject to constant wear.

Laminated Carrara

There are many uses for Carrara made up in a laminated form, and for this reason we have developed a method of lamination at the factory by the use of which the slabs are permanently cemented together under heat and pressure, so that when the completed slab is shipped from the factory, it is handled and set in exactly the same manner as a single solid slab. This method is not to be confused with the practice of building up or cementing the pieces together in the field. The laminated slab forms the finest type of toilet partitions. The laminated method also permits building up odd shapes, making extra heavy counters and table tops, and also combining the various colors.

Advantages

For use in toilet rooms, bath rooms, kitchens, or any location where decorative values and sanitation are desirable, Carrara has decided advantages over competitive materials, which cannot be overlooked. Unlike natural stone and marbles, Carrara will not absorb liquids or odors, so that an installation where it has been used is always clean and odorless. Carrara never loses its finely polished finish. This is not true of other materials. After years of service, a Carrara toilet room or bathroom has exactly the same appearance as when installed. Carrara does not craze or become discolored. For example, in a shower, water having a high iron content will never stain it. Carrara can be set in large slabs with a minimum number of joints, and those few joints are hair-lines, leaving almost no place for lodging of dirt. Carrara is easy to clean. A damp cloth is usually the only cleaning agent required. In large installations there is a distinct monetary saving effected by the small amount of cleansing preparation needed. Carrara is strong and durable. Its structure is uniform and homogeneous. There are no veins or hard spots in it.

Decoration

Carrara is one of the finest mediums for expressing the modern trend of decoration, especially that type where straight lines and flat surfaces predominate. There is no waviness or distortion in Carrara. Its fine mirror-like surface may be decorated in innumerable ways. It may be sandblasted in different tones and shadings, and almost any design may be followed, no matter how intricate. It may be sandblasted deep enough to represent carving, and if desirable, gold and silver and colors may be applied.

Uses

The modern bathroom, kitchen, restaurant, cafeteria, store, theatre and soda fountain—wherever beauty, permanence and sanitary value are desirable, offer numberless opportunities for using Carrara. For public toilet rooms, shower rooms, barber shops, laboratories, dairies, bakeries, confectioners—there are endless uses for this sanitary, permanent structural material.

Wainscoting
Shower compartments
Toilet compartments
Base
Ceilings
Bulkheads
Store Fronts
Counters
Bank desks
Decorative paneling
Switch boards
Shelves
Window stools
Table tops
Deal Plates
Laboratory equipment
Refrigerator linings
Bread oven covering
Scale tops

Carrara For Store Fronts

Carrara has a structure that has been developed to meet the requirements of outdoor use. It will not lose its polish or change color as so many other similar materials do.

The ground and polished finish is dignified. There is no waviness or warping to mar the design. The expansion from heat is lower than most comparable materials. The coefficient of expansion is only .0000077. When you specify Carrara, you receive a material that is structurally sound.

SUGGESTED SPECIFICATIONS

Structural Glass

This contractor is to furnish all labor, material, equipment and service necessary for properly installing all Structural Glass as indicated on the drawings.

All Structural Glass shall be Carrara as made by the PITTSBURGH PLATE GLASS COMPANY of size and thickness indicated on the drawings. Finish of face side and all exposed edges to be polished.

For list of warehouses and map showing warehouses and factories see back cover.

Contractor shall verify all dimensions at building, prepare shop drawings and furnish the architect with three sets of prints for approval. Doors, equipment and all hardware not necessary for erection of Structural Glass will be furnished and installed by other contractors.

Other contractors will prepare walls, furnish and set wood grounds—also wood blocks for fixtures.

The polished finish will be obtained by grinding the surface until a true plane is produced and then mechanically polishing it to a high lustre. Installation will be made according to the best standard erection practice and to the satisfaction of the architect.

All pieces shall be set plumb and true and with even flush joints which shall be filled with an approved type of pointing compound.

This contractor shall do all cutting and drilling of Carrara for other contractors provided they furnish him with accurate layouts so that it may be done at the factory.

At the completion of his work, this contractor shall remove all rubbish and carefully clean the Carrara and leave it in a satisfactory condition.

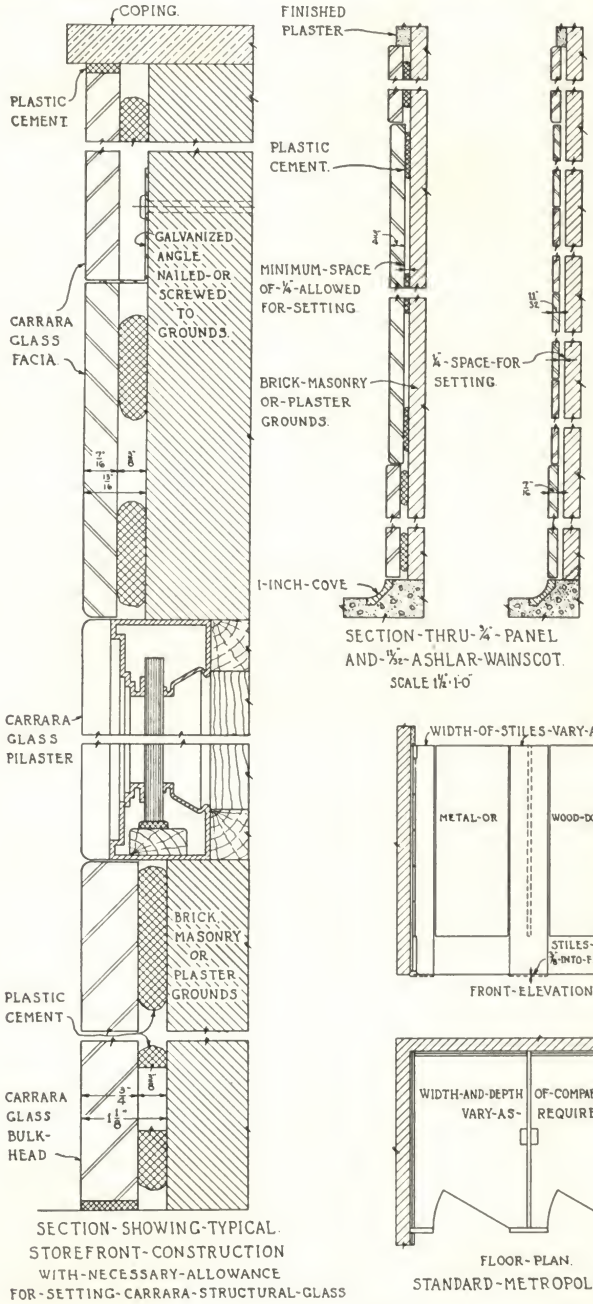
Installation

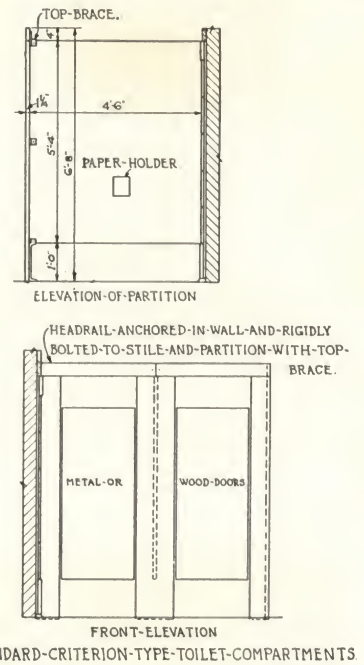
Carrara is easy to install. It is handled similarly to marble. To insure installations being made according to our standards, we maintain our crews of experienced marble setters.

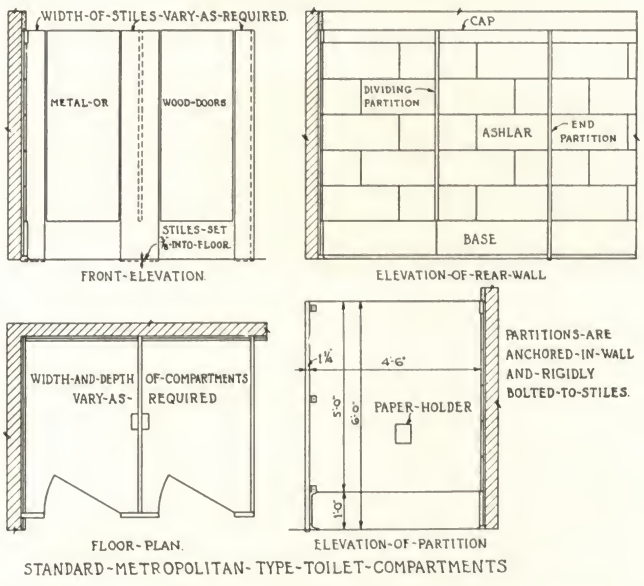
Carrara may be installed over any hard, firm wall surface, but an allowance should be made of 1 to 1¼ ins. from the face of the glass to the wall to provide space for setting.

In the case of ashlar wall treatment, where small pieces are used, we recommend setting with our plastic cement, which bonds permanently with the glass and the wall—yet allows for settling, shrinkage and expansion.

We provide all hardware necessary for the erection of our material, and will have the slabs drilled for any hardware or fixtures which we do not supply, such as hinges, strikes, etc., provided we are furnished their location and dimensions, so that the drilling may be done at the factory.







TYPE AND THICKNESS OF CARRARA RECOMMENDED FOR VARIOUS MEMBERS

Wainscot, Panel	¾ in.	Counter Tops	1¼ in.	Lintel	1¼ in.	Stiles	1¼ in.
Partitions, Solid	⅞ in.	Bulkheads	¾ in.	Cap	7/16 in.	Ceiling	11/32 in.
Partitions, laminated	¾ in.	Base	7/16 in.	Door and Window Trim	⅞ in.	Shower Seat	1¼ in.
Wainscot, Ashlar	11/32 in.	Store Fronts	7/16 in.			Deal Plates	⅞ in.

For list of warehouses and map showing warehouses and factories see back cover.



HERE IS A BATHROOM which can truthfully be said to have a personality of its own. Its walls of Ivory and Jade Carrara lend it a note of restrained elegance and individuality which harmonize with the appointments of the most pretentious home. Yet such an installation of Carrara is well within the means of the average home-owner. Bathrooms done in Carrara Glass have become deservedly popular in modern residences. This durable, attractive structural material is also perfectly suited for use in the creation of beautiful, sanitary kitchens in the homes of today.





JADE



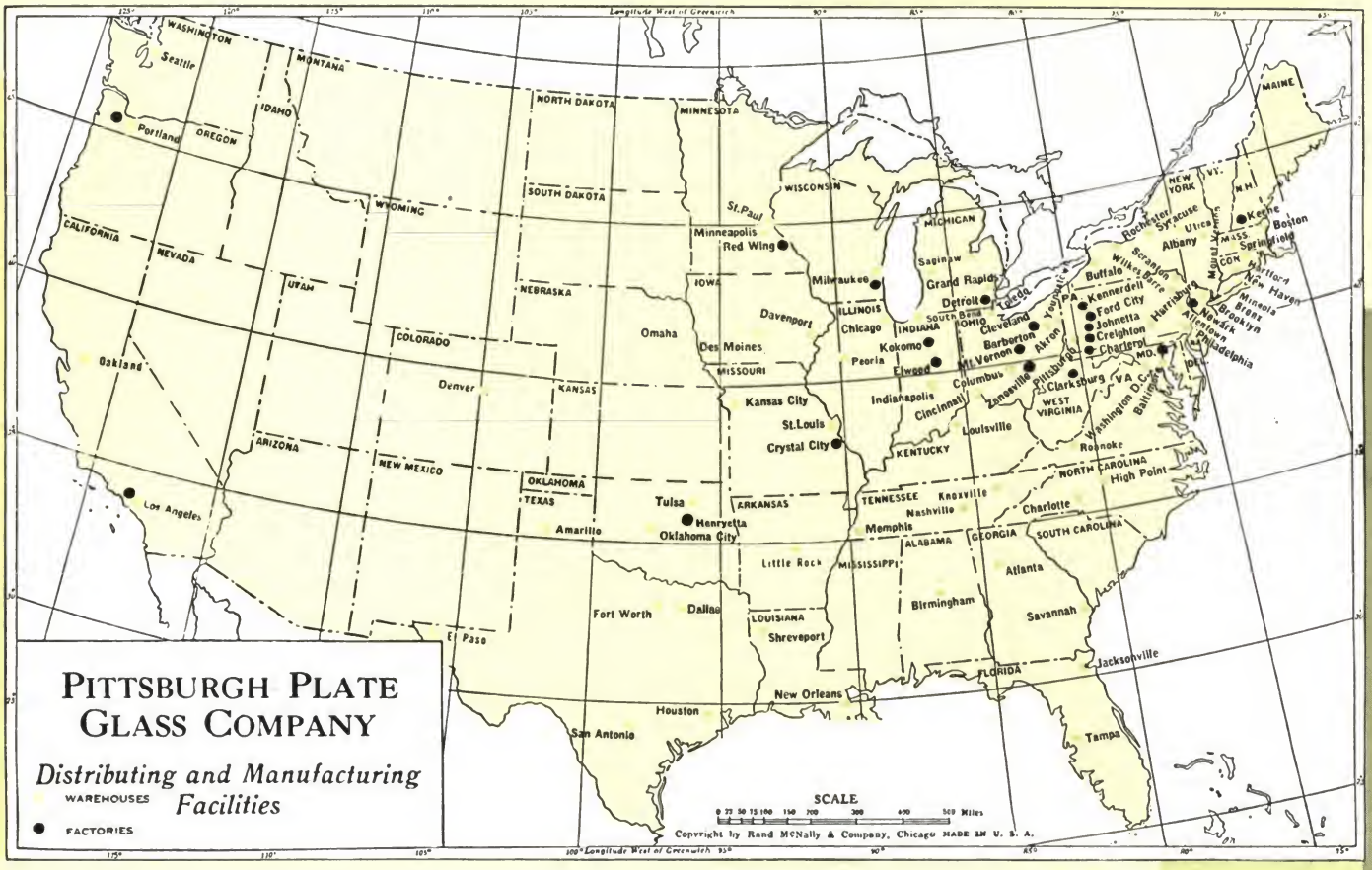
BLACK

IVORY

WHITE

CARRARA GLASS is now available in four attractive shades — Jade, Ivory, Black and White. The color blocks above show the four types of Carrara. Combinations of these colors may be used in accordance with individual tastes, and it is also possible to obtain laminated Carrara Glass — as illustrated at the right. Laminated Carrara consists of different colors of Carrara cemented firmly together.





AKRON, Ohio
101 Lincoln Street

ALBANY, N. Y.
N. Ferry St., East of B'way

ALLENTOWN, Pa.
827 North 12th Street

AMARILLO, Tex.
Thirteenth and Grant Streets

ATLANTA, Ga.
180 Alabama Street, S. W.

BALTIMORE, Md.
8-12 S. Paca Street

BIRMINGHAM, ALA.
2nd and 29th Streets

BOSTON, Mass.
300-316 Babcock Street

BRONX, N. Y.
144th and Exterior Streets

BROOKLYN, N. Y.
Jay, Water & Plymouth Sts.

BUFFALO, N. Y.
101-107 Seneca Street

CHARLOTTE, N. C.
214-216 East 6th Street

CHICAGO, Ill.
431-451 St. Clair Street

CINCINNATI, Ohio
B'way, Court & Eggleston

CLEVELAND, Ohio
3849 Hamilton Avenue

COLUMBUS, Ohio
133-135 East Spring Street

DALLAS, Texas
Sante Fe Terminal Bldg.

DAVENPORT, Iowa
414-428 Scott Street

DENVER, Colo.
Broadway at Market

DES MOINES, Iowa
108 East 4th Street

DETROIT, Mich.
Hamilton & Holden Aves.

EL PASO, Texas
1100-06 Overland Street

FORT WORTH, Texas
321-323 S. Main Street

GRAND RAPIDS, Mich.
21-23 S. Ionia Avenue

HARRISBURG, Pa.
17th and Brookwood Sts.

HARTFORD, Conn.
38-40 Chapel Street

HIGH POINT, N. C.
431 Hamilton Street

HOUSTON, Texas
Crawford & Commerce Sts.

INDIANAPOLIS, Ind.
1915 Madison Avenue

JACKSONVILLE, Fla.
1530 W. Beaver Street

KANSAS CITY, Mo.
5th and Wyandotte Streets

KNOXVILLE, Tenn.
203-211 Humes Street

LITTLE ROCK, Ark.
Foot of Scott Street

LOS ANGELES, Cal.*
P O Box S, Florence Branch

LOUISVILLE, Ky.
16th and Main Streets

MEMPHIS, Tenn.
435 Madison Avenue

MILWAUKEE, Wis.
816-820 North Market St.

MINEOLA, N. Y.
49 Windsor Avenue

MINNEAPOLIS, Minn.
616-628 South Third Street

MT. VERNON, N. Y.
556-562 S. Fulton Avenue

NASHVILLE, Tenn.
Grundy St. and 11th Ave.

NEWARK, N. J.
Elizabeth Ave. & Peddie St.

NEW HAVEN, Conn.
26 Mill Street

NEW ORLEANS, La.
314 Girod Street

OAKLAND, Cal.*
1125 Castro St., Corner 12th

OKLAHOMA CITY, Okla.
101-103 E. California Ave.

OMAHA, Neb.
14th and Jones Streets

PEORIA, Ill.
913-917 S. Washington St.

PHILADELPHIA, Pa.
Box 6860
16th and Indiana Avenue
(N. Philadelphia Station)

PITTSBURGH, Pa.
632-642 Duquesne Way

PORTLAND, Ore.*
184 Second Street

ROANOKE, Va.
14-24 Pleasant Avenue, S.E.

ROCHESTER, N. Y.
149-153 State Street

SAGINAW, Mich.
Fitzhugh and Water Streets

SAN ANTONIO, Texas
1420-1426 S. Alamo Street

SAVANNAH, Ga.
Central of Georgia Term'ls

SCRANTON, Pa.
Wyoming Ave. at New St.

SEATTLE, Wash.*
316 Westlake Avenue, N.

SHREVEPORT, La.
Fannin and Commerce Sts.

SOUTH BEND, Ind.
1138-1140 S. Lafayette St.

SPRINGFIELD, Mass.
126 Liberty Street

ST. LOUIS, Mo.
3900 Chouteau Avenue

ST. PAUL, Minn.
459-461 Jackson Street

SYRACUSE, N. Y.
433-435 South West Street

TAMPA, Fla.
1006-1008 Ashley Street

TOLEDO, Ohio
2410-2416 Albion Street

TULSA, Okla.
Detroit and Archer Streets

UTICA, N. Y.
615 Eagle Street

WASHINGTON, D. C.
4th and Channing Sts., N. E.

WILKES-BARRE, Pa.
54 Scott Street

YOUNGSTOWN, Ohio
214-218 East Boardman St.

* *Serving the trade in Paint Department items only.*



STEUBEN

ARCHITECTURAL CAST GLASS

CORNING GLASS WORKS · CORNING · N·Y

STEUBEN
ARCHITECTURAL CAST GLASS

THE PRODUCT
OF A COMPANY
FAMOUS FOR
THE QUALITY AND
BEAUTY OF THE
GLASSWARE FROM
ITS
STEUBEN FURNACES

Steuben Division
CORNING GLASS WORKS
100 West Erie Avenue
CORNING, NEW YORK

SHOW ROOM AND SALES OFFICES
501 FIFTH AVENUE
NEW YORK, N. Y.

CRAFTSMEN SINCE 1868

Corning Glass Works has been engaged in creating, perfecting, and manufacturing various types of glassware since 1868. The types of glass vary from laboratory and signal light glass to those produced by the Steuben Division consisting of the well-known, exquisitely shaped, hand wrought table glass and stemware; and Architectural Cast Glass, in both Crystal and "Pyrex" Brand Glass, known for its heat-resisting qualities.

The craftsmanship which produces the finest table glass and the research which perfected the well-known "Pyrex" heat-resisting glass, are combined in the production of Architectural Cast Glass. This glass is designed mainly for lighting effects, exterior or interior use, heating and ventilating grilles, as well as other decorative uses. It is heat-resisting and weather-proof.

Steuben Architectural Cast Glass affords the architect and designer a medium for producing decorative as well as structural effects which hitherto have been thought impossible to produce in glass. It may be obtained in two ways: the glass cast from special moulds to follow accurately the individual, proprietary designs of the architect; or the design based on use of standard units, either plain, moulded, or decorated.

ARCHITECTURAL CAST GLASS MADE TO ARCHITECT'S SPECIAL DESIGNS

In this glass of special design, the designer is almost unlimited in his creative scope. All glass is made in specially constructed moulds which follow the architect's designs. These designs and moulds are proprietary to the architect or owner and are not used again unless by their special permission. For some special designs, see following pages.

DESIGNS PRODUCED FROM STANDARD SHAPES AND UNITS

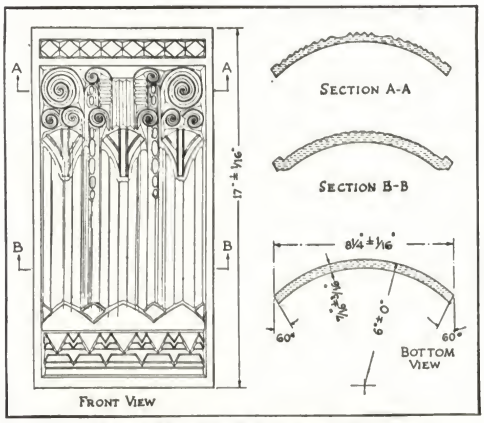
Beautiful results can be produced by the use of standard shapes at a frequently lower cost for the finished product. In this way the cost of special moulds is eliminated. For standard shapes obtainable, see pages 8, 9, and 10.

SPECIAL GLASS OF ANY CHARACTER PRODUCED

Architects are often confronted with problems in which it is a distinct advantage to use glass of a particular texture, character, color, or shape. In this respect we wish to assure architects of our desire to work with them to secure the effects desired. Architects sometimes think that it is necessary to send abroad for special glass, but Steuben glass can be produced in almost any color, texture, character, or shape. We also offer the advantage of the close coordination of effort and supervision of the architect which is impossible when the glass is produced abroad.

DECORATIVE CAST GLASS

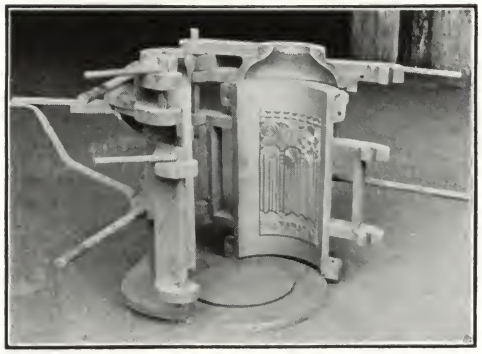
IN FULL OR PARTIAL RELIEF AND IN INTAGLIO, IN PANELS OR GRILLES, AND IN THE ROUND.



DRAWING OF THE DESIGN



THE MODEL



THE MOULD



FINISHED GLASS

Created from Carefully Constructed Models After the Architect's Proprietary Designs

THE DESIGN

Before making the preliminary design or full size detail for Architectural Cast Glass, it is often an advantage to consult with an architectural representative of the Steuben Division, who will gladly call and explain the possibilities and varieties of artistic effects which can be obtained in our glass. In many cases it has been possible through consultation to suggest uses and effects which were not thought to be possible. Cost of special moulds can often be reduced by the co-operation of our representative. We suggest that, after the design is determined, a price be given; and if the glass is to be of structural character and built in, the allowance for the glass be included in the contract. If it is a part of lighting fixture, then the estimate is given to the lighting fixture manufacturer.

THE MODEL

After the full scale detailed drawing has been approved by the architect, a full size model is carefully constructed to follow the original design. We maintain a well equipped department with expert modelers, especially trained in this class of work. An over allowance is made in the size of the model to take care of the shrinkage in casting of the mould. This amounts to about ⅛ inch per foot. The model must be carefully executed and our modelers are especially trained for this work so that only the very finest results may be obtained. The models may be made by others if desired, but we prefer to have our own men do the work on account of their knowledge of the results obtained in the glass.

THE MOULD

Upon the approval of the plaster model, a specially constructed mould is made of a fine grade of iron or other material, and great care is taken to produce a perfect mould so as to reproduce accurately the detail of the plaster model. This is the most costly part of the work, but if a number of pieces are cast from the same mould, the cost becomes very nominal for each piece.

THE FINISHED CAST GLASS

In casting the glass it is not poured, but is cast, pressed, or blown into the mould by hand in a semi-molten state. After cooling, the glass comes out in clear glass or in clear color if the glass is colored. The finishes of the glass are described on page 3. The maximum areas in which glass can be cast are about equal to an area of 20 inches square, thickness depending on the size of the piece. The finished glass weighs about 9 lbs. per square foot, depending upon thickness.

QUICK DELIVERY AND REASONABLE COST

Ordinarily, delivery can be made in from four to ten weeks after the finished model or drawings are approved, depending on the size of the order. The glass may be one of the last things to be set in the buildings, whether in the structure itself or in lighting fixtures, grilles, etc. Ample time should be allowed for producing the best possible work. The glass, if in structural work, is set by glass setters or metal workers, depending on local trade jurisdiction and the manner in which it is used.

THE VARIOUS POSSIBILITIES IN THE TREATMENT AND FINISHING OF CAST GLASS

POLISHED FRONT FACE WITH DECORATION IN RELIEF OR IN INTAGLIO

Light Reflected Through the Glass From the Edges



SATIN FINISH PANEL
INTAGLIO DESIGN



SAME DESIGN PARTLY
SATIN FINISHED

In general there are two methods of decorating cast glass:

(1) With the decoration in relief or in intaglio on the back of the glass and a smooth, plain surface on the exposed side.

(2) The relief or intaglio on the front surface, with back smooth, or satin, dust-proof finish.

The illustrations at the left show the same panels with the intaglio design on the back. Being intaglio, the smooth plain surface is on the exposed side of both. The first has the design satin finished, while in the second the part showing light has the satin finish; that showing black is clear Crystal glass.

Also see illustrations on page 4.

FRONT SURFACE IN HIGH RELIEF—BACK AND EDGES POLISHED

Lighted Through the Glass From the Edges



CLEAR GLASS PANEL WITH
RAISED DESIGN ON FRONT



SAME PANEL WITH RAISED
DESIGN SATIN FINISHED

By the method of lighting Steuben Architectural Cast Glass through the edges, decorative lighting effects can be obtained which are impossible with any other material. Interesting effects of color in varied hues are produced by the interposition of colored slides, or by colored lamps themselves.

Illustrations at left show a panel with a flat back and the design in relief on the front. In the first, the entire panel is shown clear, while the second is shown with the background clear, and the raised design is satin finished, which brings out the design and makes it translucent.

The two illustrations at the foot of the column show the same design in grille form. The thickness of the glass in relief may be varied from $\frac{3}{8}$ or $\frac{1}{2}$ inch to 2 inches, and, if necessary, to $2\frac{1}{2}$ inches, depending on the size, design, and the result desired.

THE DIFFERENT FINISHES OF CAST GLASS

(1) Clear Glass from the Mould—The glass as it comes from the mould is clear or in clear colors when colored, and with a slight, interesting texture following that of the mould. This slight texture is often preferred by architects to a polished finish for bold designs with large detail.



SAME DESIGN AS A GRILLE
ALL OVER SATIN FINISH



FULL SIZE OF PORTION TO
SHOW FINISHED TEXTURE

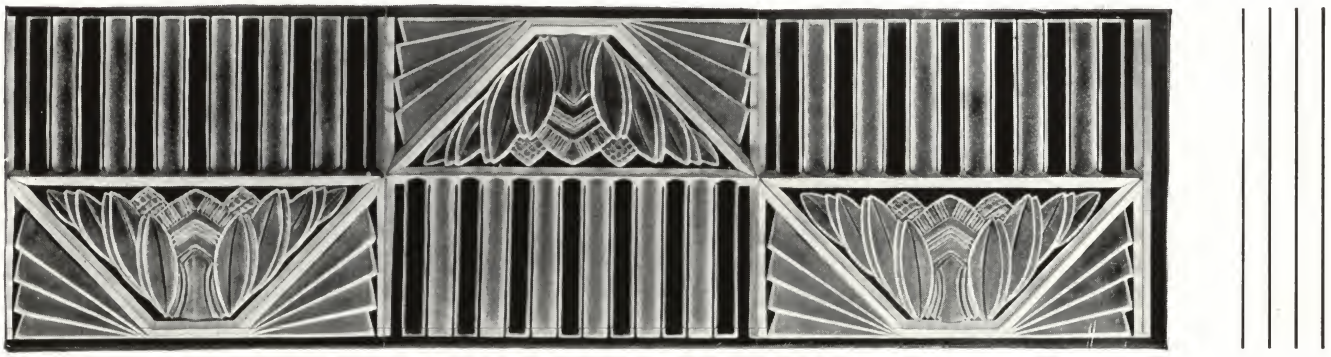
(2) Clear Glass Polished Finish—This consists of grinding and polishing the surfaces of the glass desired polished, generally on flat faces and edges to make them absolutely true for jointing or for ease of cleaning.

(3) Translucent Satin Finish—Dustproof—Produced by treating the surfaces desired to be translucent, with a special finish. The resulting finish brings out the design, as well as gives a character entirely different to that of sand blasting or grinding. Surface is practically dustproof and resembles the smooth, honed finish of marble, yet has great brilliancy against the light.

(4) Satin Finish—Highlighted—Consists of slightly polishing, buffing, or highlighting the high spots or ornaments of a panel in relief which have first been given an all over satin finish. This treatment adds brilliancy and sparkle to plain, translucent satin finish.

(5) Contrast of Finishes to Emphasize Design—By contrasting crystal and satin-finishes in panels or on grilles, design is brought out to better advantage.

CO-OPERATING WITH THE ARCHITECTS IN THE DEVELOPMENT OF THEIR DESIGNS



THREE UNITS OF THE REPEAT DESIGN

THE PART SHOWING BLACK IS CLEAR CRYSTAL—THE LIGHT SURFACES ARE SATIN FINISH—FRONT FACE IS POLISHED TO FACILITATE CLEANING—THE DESIGN IS IN INTAGLIO ON THE BACK



VIEW OF ONE OF THE ELEVATOR LOBBIES, EMPIRE STATE BUILDING, NEW YORK, N. Y.

DECORATIVE COVE LIGHTING EFFECT IN ENTRANCE AND ELEVATOR LOBBIES OF THE EMPIRE STATE BUILDING NEW YORK CITY

CAST GLASS DESIGNED BY THE ARCHITECTS SHREVE, LAMB, & HARMON

EACH UNIT IS APPROXIMATELY 10⅜ x 12 INCHES AND THE JOINTS BETWEEN THE UNITS ARE GROUND AND POLISHED TO ASSURE TIGHT FIT.

GLASS MAY BE MADE IN COMBINATIONS OF FINISHES TO CARRY OUT DESIRED DECORATIVE EFFECTS.

GLASS FOR EXTERIORS

STEUBEN ARCHITECTURAL CAST GLASS

Installed in New Syracuse Lighting Company Building, Syracuse, N. Y.

Melvin L. King, Architect; Bley & Lyman, Consultants

Faithful reproduction of architect's designs has obtained a striking effect in Pyrex Heat Resisting Glass that is immune to sudden temperature changes and to weathering.



GENERAL EXTERIOR VIEW



DETAIL OF PYREX CAST GLASS IN A PYLON



GENERAL NIGHT VIEW



NIGHT VIEW OF MAIN ENTRANCE, SHOWING THE PYLONS ILLUMINATED

NEW APPLICATIONS OF SPECIAL DESIGNS FOR FIXTURES

AS USED IN THE JOHN WANAMAKER STORE NEW YORK CITY

Designs by
Voigt Company
Philadelphia, Pa.



DETAIL OF THE ORNAMENT ABOVE THE CORNICE, OVER THE ENTRANCES TO THE ELEVATORS FIRST FLOOR

GLASS HAS THE TRANSLUCENT SATIN FINISH ON BOTH ORNAMENTS



DETAIL OF ONE OF THE PERFORATED ORNAMENTS ON THE CHANDELIER



ORNAMENT ABOVE THE ELEVATORS



GLASS AND METAL CHANDELIER IN THE SILVERWARE ROTUNDA

AN INTERESTING ARCHITECTURAL USE OF CAST GLASS



INTERIOR OF FLOWER SHOP OF WADLEY & SMYTHE
Designed by John Mathews Hatton, Architect
In the Waldorf Astoria Hotel, New York City

The caps and bases of the pilasters are made of a light blue green cast glass, satin finished—the pilasters are of wood, painted.



GREEN CAST GLASS CAP AND BASE FOR PILASTERS

STEUBEN CAST GLASS ON THE HIGH SEAS

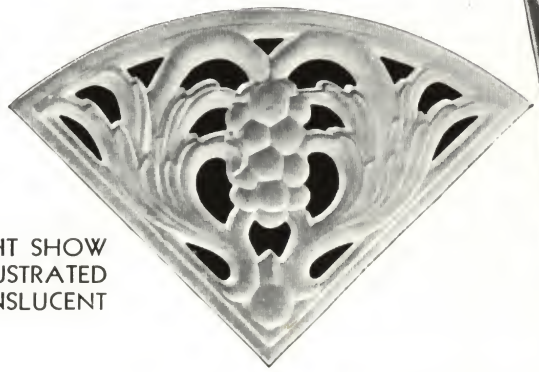
WHERE IT IS PARTICULARLY ADAPTED FOR USE AS GRILLES FOR VENTILATION AND DIFFUSION OF LIGHT

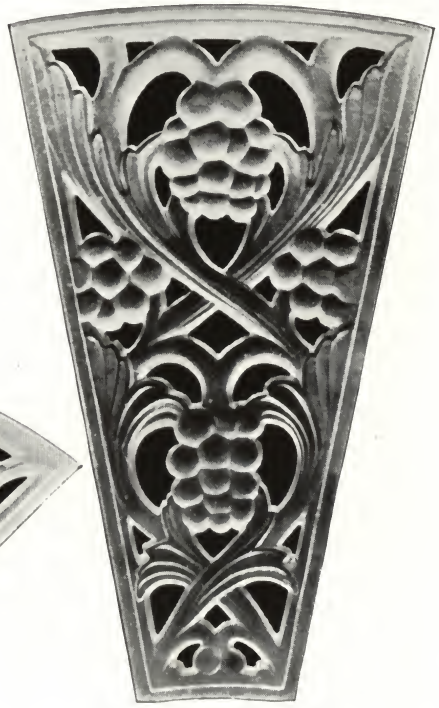
THE ILLUSTRATIONS SHOW ITS USE ON THE S. S. MORRO CASTLE AND THE S. S. ORIENTE

Designed by J. Phillip Kiesicker
Barnet Phillips Company
Architects, New York



ONE OF THE DECORATIVE CAST GLASS VENTILATING AND LIGHTING GRILLES INSTALLED IN EACH CORNER OF THE CEILING OF THE DINING ROOM IN BOTH SHIPS





THE TWO ILLUSTRATIONS ON THE RIGHT SHOW THE TWO UNITS USED IN THE GRILLE ILLUSTRATED ABOVE. THE GLASS HAS THE TRANSLUCENT SATIN FINISH



DETAIL OF ONE GRILLE UNIT OF THE VENTILATING AND DIFFUSING BORDER AS ILLUSTRATED AT THE RIGHT. THE GLASS HAS THE TRANSLUCENT SATIN FINISH



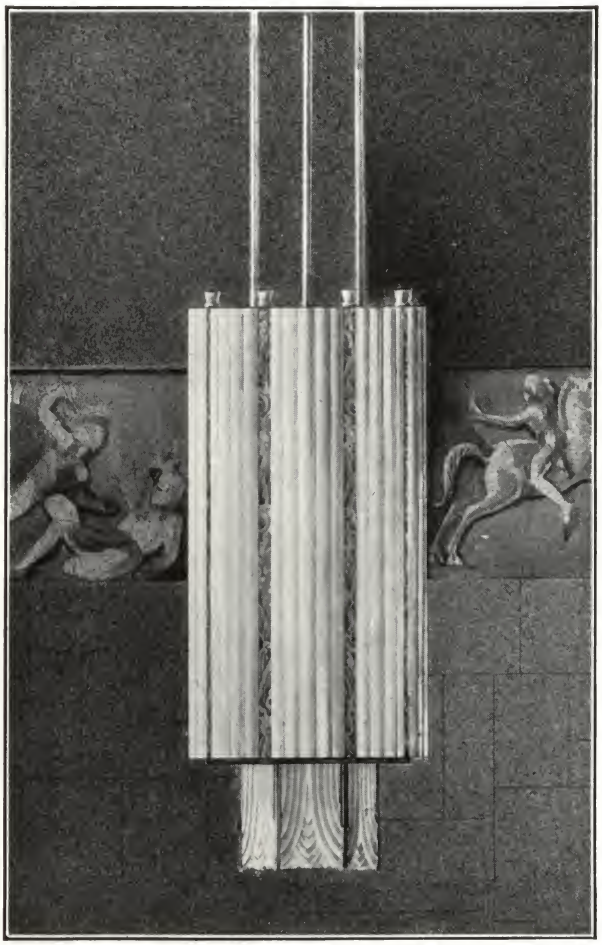
GENERAL VIEW OF PORTION OF THE VENTILATING AND DIFFUSING SASH OF SKYLIGHT, WITH CAST GLASS GRILLES IN THE BORDER INSTALLED OVER THE STAIR WELL

STANDARD SHAPES

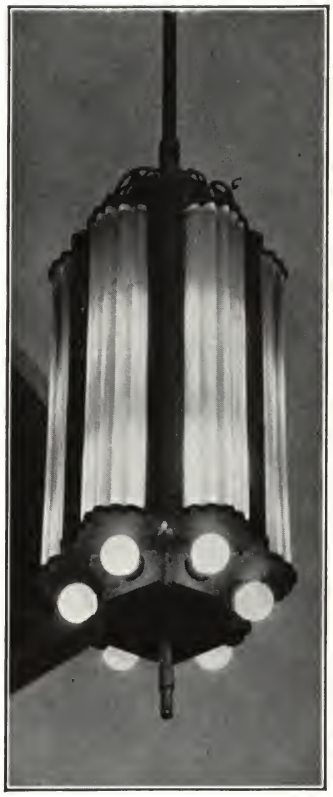
AND THEIR USE IN LANTERN TYPE LIGHTING FIXTURES



VESTIBULE LANTERN,
BALTIMORE LIFE INS. BLDG.,
BALTIMORE
Style No. A-2006



Upper portion is our Style No. A-2005; lower portion, Style No. A-2058



LOBBY LANTERN,
Y. M. H. A. BUILDING,
BALTIMORE, MD.
Style No. A-2005



LOBBY WALL
LANTERN
Style No. A-2005



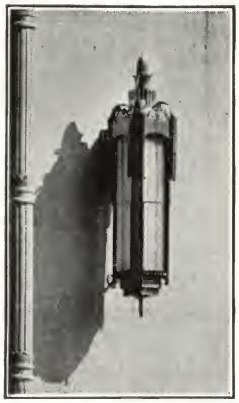
CORRIDOR LANTERN
Style No. A-2006



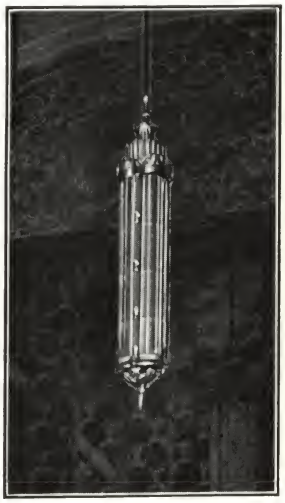
ACCEPTED DESIGN
FOR THE
BEAUX-ARTS
INSTITUTE OF DESIGN

Submitted by

Cox, Nostrand &
Gunnison



EXTERIOR LANTERN
Style No. A-2006

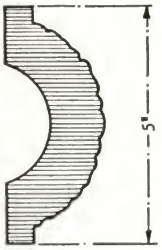


ENTRANCE VESTIBULE
LANTERN
Style No. A-2006

A FEW EXAMPLES OF VARIOUS TYPES OF EXTERIOR AND INTERIOR LANTERNS
SHOWING THE USE OF STEUBEN CAST GLASS

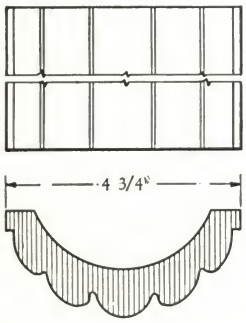
SOME STANDARD SHAPES

FOR VARIOUS PURPOSES

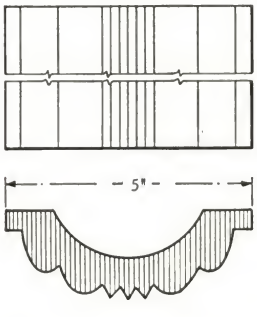




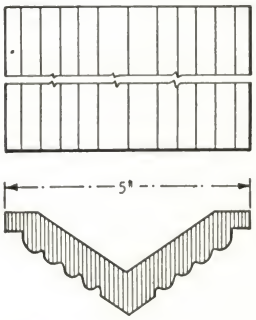
A 2039 SOLID COLUMN
In lengths up to 36 in.
Max. thickness 1 1/8 in.
Weight 14 pounds for each 36 in. length



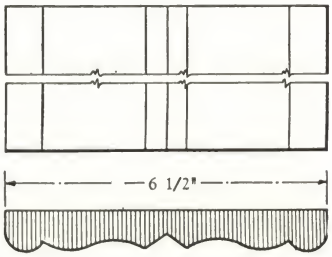
A 2005 SOLID COLUMN
In lengths up to 30 in.
Max. thickness 1 1/4 in.
Weight 10 pounds for each 30 in. length



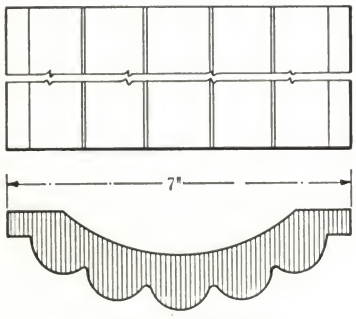
A 2037 SOLID COLUMN
In lengths up to 36 in.
Max. thickness 1 in.
Weight 13 1/2 pounds for each 36 in. length



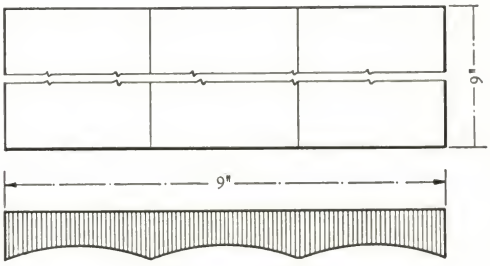
A 2038 SOLID COLUMN
In lengths up to 36 in.
Max. thickness 3/4 in.
Weight 11 1/2 pounds for each 36 in. length



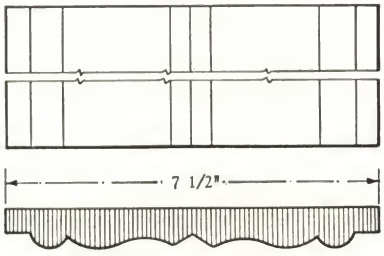
A 2006 SOLID COLUMN
In lengths up to 21 in.
Max. thickness 7/8 in.
Weight 5 1/2 pounds for each 21 in. length



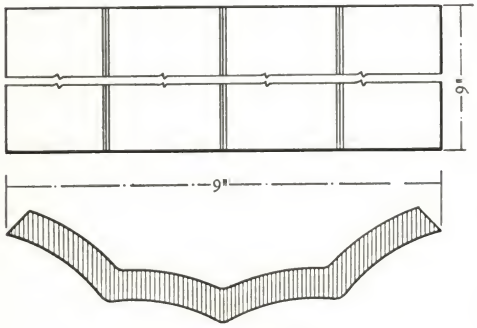
A 2005 7 in. SOLID COLUMN
In lengths up to 36 in.
Max. thickness 1 1/4 in.
Weight 15 1/2 pounds for each 36 in. length



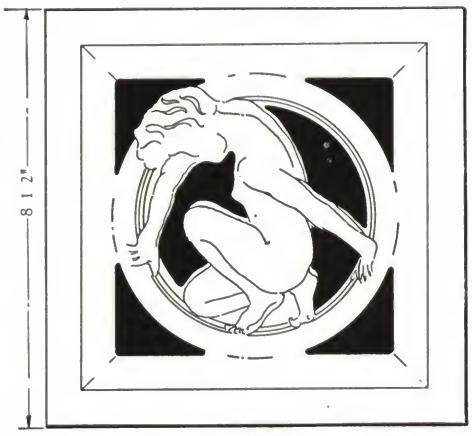
A 2086 SOLID SQUARE
Max. thickness 1 in.
Weight 7 1/2 pounds each



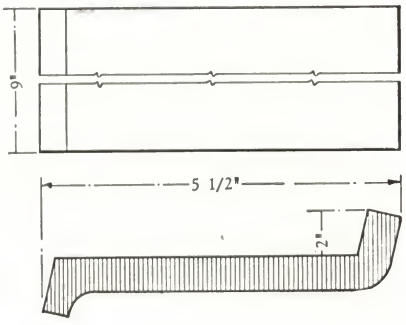
A 2006 SOLID COLUMN
In lengths up to 30 in.
Max. thickness 1 in.
Weight 9 1/4 pounds for each 30 in. length



A 2089 SOLID CURVED PANEL
Max. thickness 1 in.
Weight 6 1/2 pounds each

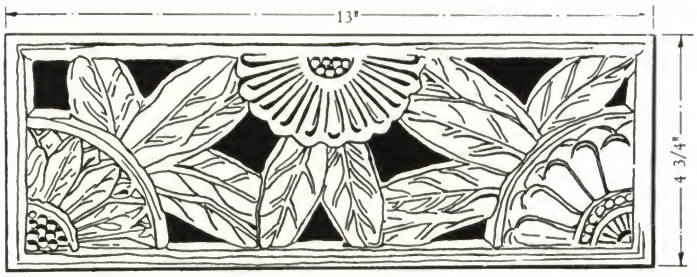


A 2002 PERFORATED GRILLE
Opposite Design 2118
Max. thickness 3/4 in.
Weight 1 3/4 pounds each.

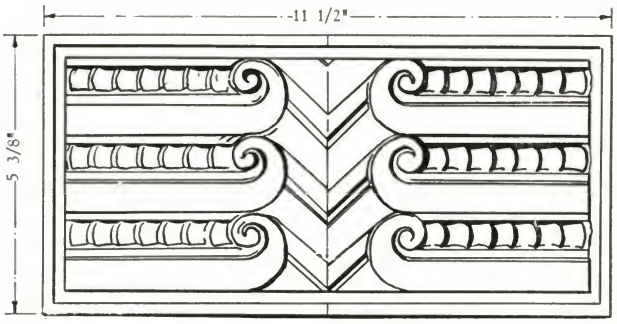


A 2088 SOLID PANEL
Max. thickness 3/4 in.
Weight 3 1/2 pounds each

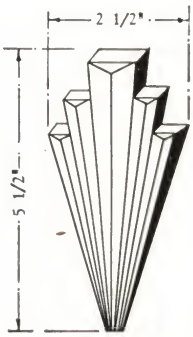
STANDARD SHAPES



A 2011 PERFORATED GRILLE
Max. thickness 5/8 in.
Weight 3 pounds each



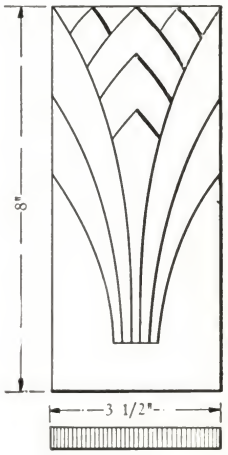
A 2034 SOLID PANEL
Max. thickness 7/16 in.
Weight 2 pounds each



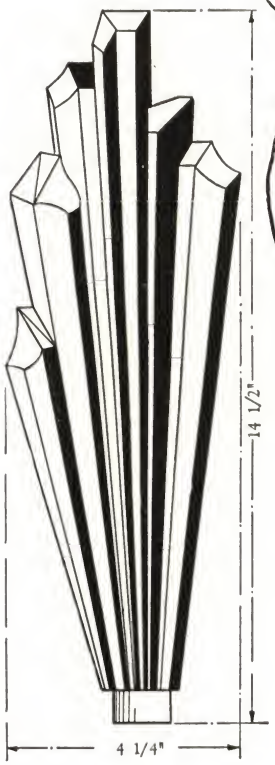
A 2081 SOLID
Max. thickness 3/4 in.
Also made 4 1/2 in. high
Weight 4 1/2 in.—6 oz. each
Weight 5 1/2 in.—7 oz. each



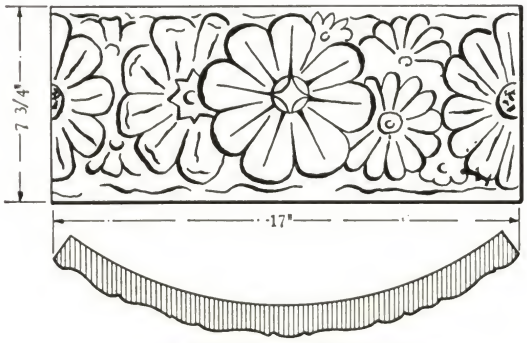
A 2008 SOLID PANEL
Max. thickness 7/8 in.
Weight 15 pounds each



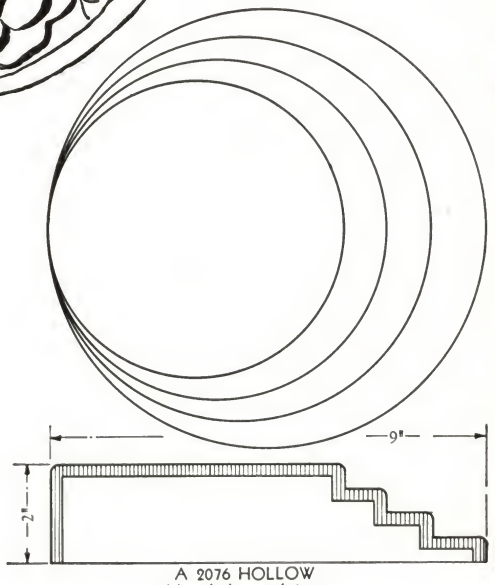
A 2058 SOLID PANEL
Max. thickness 5/8 in.
Weight 1 1/2 pounds each



A 2044 SOLID
Max. thickness 1 1/2 in.
Weight 3 pounds each



A 2059 SOLID CURVED PANEL
Max. thickness 2 5/8 in.
Weight 27 pounds each



A 2076 HOLLOW
Max. thickness 3/16 in.
Weight 2 1/2 pounds each

Steuben

ARCHITECTURAL CAST GLASS

ARCHITECTURAL PRESSED GLASS

ARCHITECTURAL BLOWN GLASS

PANELS

GRILLES

GLASS FOR LIGHTING FIXTURES

STEMWARE

ARTWARE



ORNING GLASS WORKS · CORNING · N·Y·

Glass

by Mississippi

Polished Wire Glass
Polished Figured Wire Glass
Plain Figured Wire Glass
Plain Figured Glass
Polished Figured Glass

The Right Glass for the Particular Purpose

MISSISSIPPI STYLES

Thousands of Square Feet of MISSISSIPPI GLASS



Bank of Manhattan Building, 40 Wall Street
New York, N. Y.
H. CRAIG SEVERANCE, Architect
STARRETT BROS. & EKEN, INC., Contractors

MISSISSIPPI GLASS COMPANY
MISSISSIPPI WIRE GLASS COMPANY

220 FIFTH AVENUE

CHICAGO NEW YORK ST. LOUIS

MISSISSIPPI GLASS

A Standard for Every Architectural Daylighting Requirement

Products

PLAIN and POLISHED FIGURED GLASS, POLISHED WIRE GLASS, PORT LIGHTS, DECK, VAULT or FLOOR LIGHTS.

Mississippi Glass

The various patterns of Mississippi Figured Glass make it possible to choose styles that will be in keeping with the architecture of a building, as well as to obtain the maximum possible advantage from daylight illumination.

Brilliancy, strength, true cutting surface, uniformity of color and excellence of quality in Mississippi patterns combine with moderate cost to make Mississippi Glass the choice of thousands of architects, engineers and builders.



Identification Label on Mississippi Wire Glass

Mississipi Wire Glass

The MISSISSIPPI WIRE GLASS COMPANY is the original manufacturer of Solid Wire Glass, and its product is universally recognized as the standard wire glass, being the product upon which the Underwriters' standard was based in 1899.

By our process of manufacture, Standard Wire Glass is cast solid, and is equal in quality to any similar product on the market.

Wire Glass is rolled plate glass having a wire netting embedded equidistant from either surface. This process is automatically effected while the glass is in a molten state and, therefore, insures homogeneous and solid wire glass.

Adaptability of Wire Glass

The object of Wire Glass is to afford perfect and constant fire protection at a minimum cost, at the same time admitting and diffusing the light. It is particularly suitable for use in windows, doors, transoms, skylights, and all places where fire or breakage protection is required.

Advantages of Wire Glass

When employed as above mentioned, Wire Glass may be fractured by severe heat or sudden shock, but the wire mesh will hold the shattered pieces in place, preventing their falling and causing serious injury or loss of life. It will also prevent draft and hold a fire within the bounds of its origin.



Identification Label on Mississippi Glass

Underwriters' Requirements, Extract from Rules—1906

"(2) Size of Glass—(a) The unsupported surface of the glass allowed shall be governed by the severity of exposure and be determined in each case by the underwriters having jurisdiction, but in no case shall it be more than 48 in. in either dimension or exceed 720 sq. in. (b) The glass to be of such dimensions, after selvage is removed, that the bearing in the groove or rabbet is not to exceed 1/8 in. less than the full depth called for in rules 7 and 8. (c) The glass to be retained by the structural part of the frame or sash independently of the material which may be used for weatherproof purposes. Only non-inflammable material to be used in setting glass in the sash."

Ordering

Glass being one of the last materials to go into a building, it is often not ordered far enough ahead to give the manufacturer time to cut the glass to sizes and make shipment in time to enclose the building by the date desired. It is, therefore, advisable to give this point consideration in due time, as the tremendous demand for figured glass and figured wire glass necessitates orders taking their turn as they are received.

In ordering always specify width first. In wire glass, the twist of the wire runs with the length of the sheet. When giving sizes remember that the first dimension is understood to be the width.

How to Specify Wire Glass

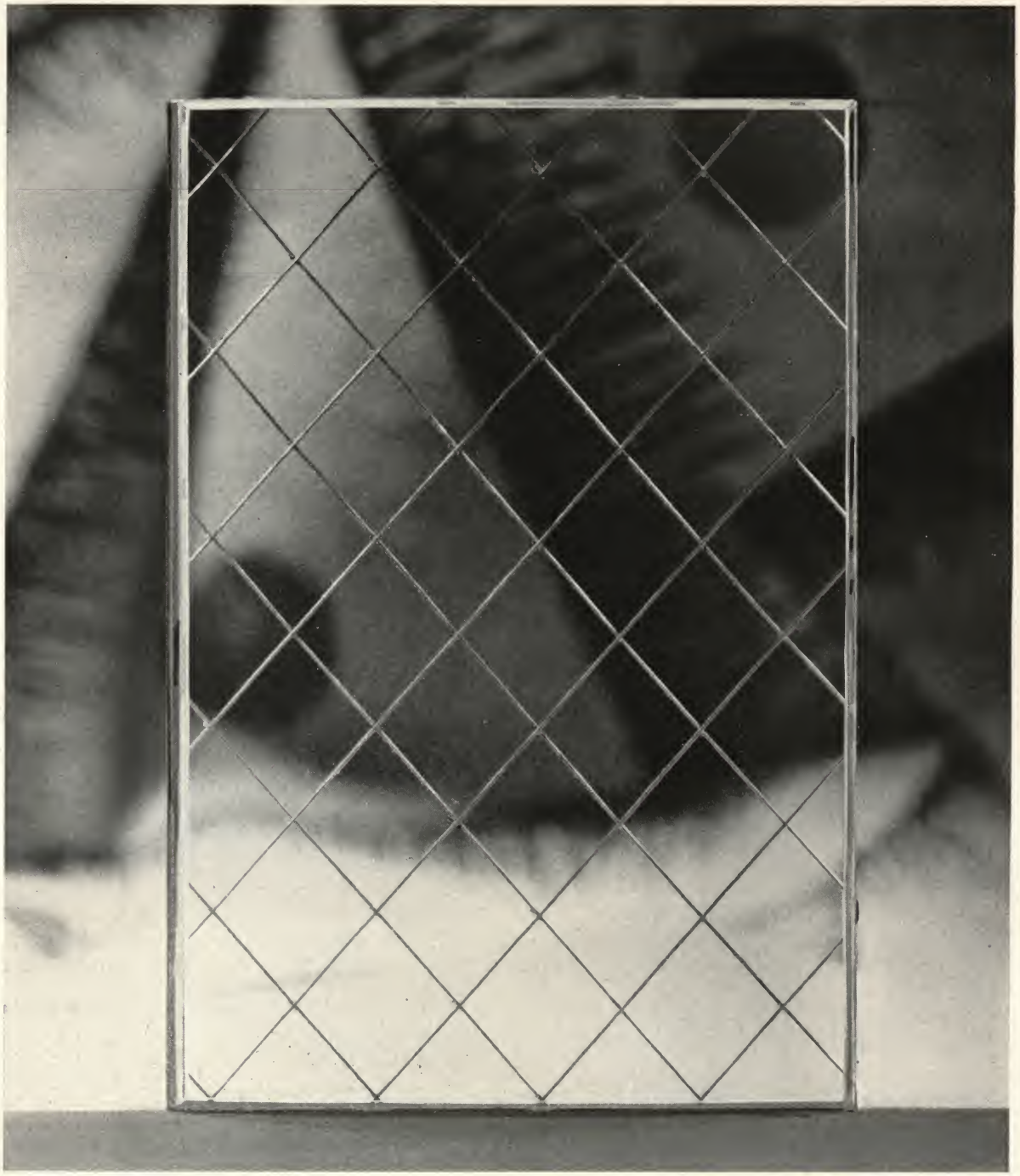
Wire Glass shall be installed in (specify location) and in all places marked "W.G." on plans and elevations.

The Wire Glass to have a thickness of at least 1/4 in. at thinnest point. Wire mesh to be not larger than 7/8 in., and no wire used for such mesh to be smaller than No. 24 B&S gauge. Plane of the wire mesh to be practically midway between the two surfaces of the glass.

Selvage shall be removed from glass before framing.

(State here type or types of glass to be used and where.)

For Full List of Sizes and Thicknesses of Mississippi Products See Page 13



Wire Actual Size

Misco Wire Glass Polished

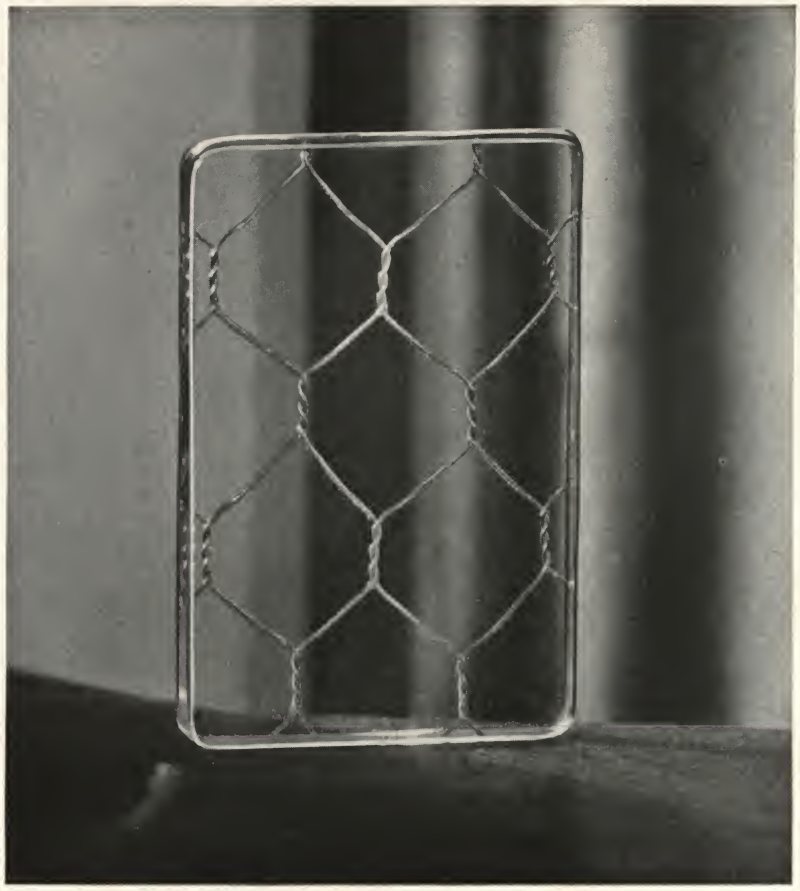
Approved Fire Retardant No. 32

Each Intersection of Wire Welded

"Misco" is the latest development in Wire Glass brought about as a result of many requests from the Architectural and Engineering professions for something as efficient as the old type Wire Glass but more attractive in appearance. "Misco" was submitted to the Underwriters' Laboratories for test and received their full approval equalling the old type Wire Glass in every respect as a fire retardant.

"Misco" can be obtained not only in Wire Glass Polished as illustrated but in several of the more popular surface patterns manufactured by the Mississippi Wire Glass Co. To be sure of getting this new glass, specify it by name—"Misco."

For Full List of Sizes and Thicknesses of Mississippi Products See Page 13



Wire Actual Size

Standard Polished Wire Glass

This product has been developed to a point of perfection. The polished surface equals that of plate glass. The wire is clean, bright and perfectly sealed within the glass. Bubbles and air spaces around the wire have been eliminated and the quality can justly be considered as near perfect as it is possible to produce this type of material.

✦

The specification of Mississippi is assurance of quality.

FACTROLITE GLASS

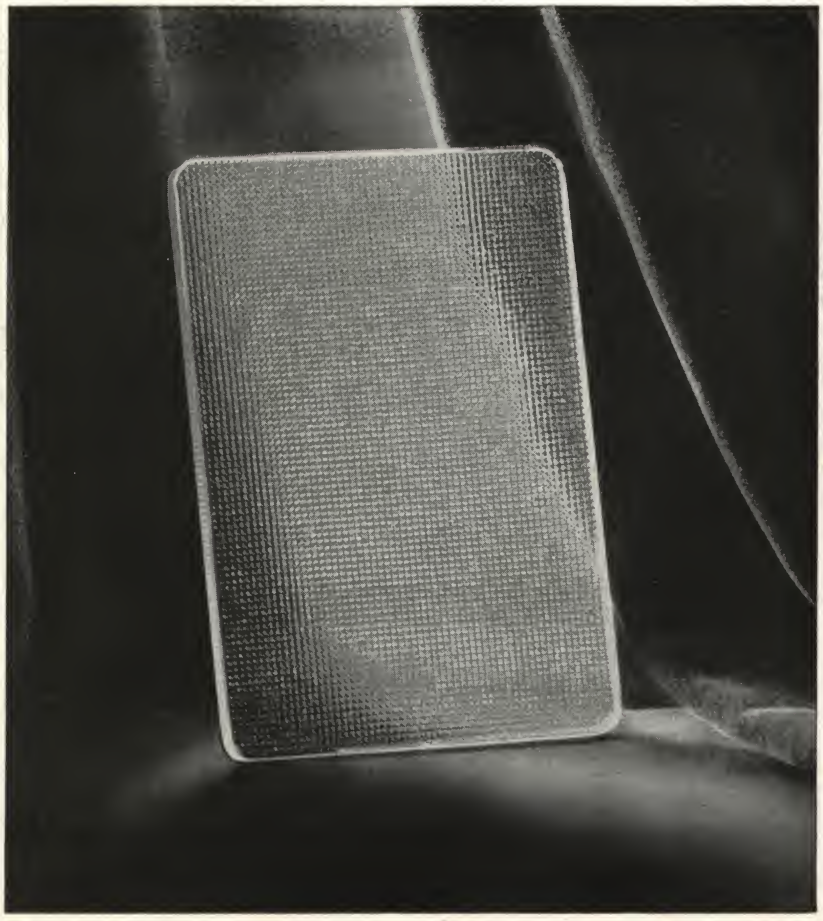
Scientifically designed to obtain maximum daylight illumination in modern factories.

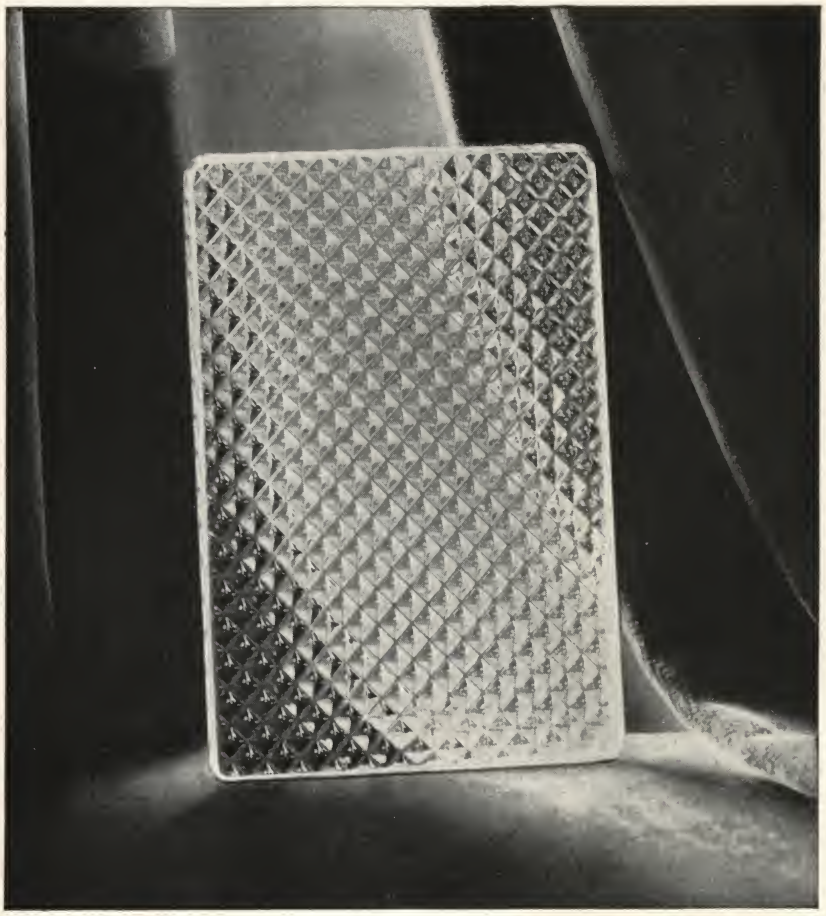
This pattern is the product of extensive research by Mississippi Engineers in the efficient use of daylight in modern factories, and is the last word in the scientific daylighting of such buildings. It will give the most uniform distribution of light in all directions that it is possible to obtain, and will increase the illumination in a building from 38% to 72% as compared with plain glass.

✦

Factrolite is manufactured in three thicknesses in plain glass and in one thickness in wire glass. See table of sizes and thicknesses on page 13.

Pattern Actual Size





Pattern Actual Size

Aurora Glass

The ideal glass for partitions. The pattern is cut at an angle which gives the maximum transmission of light, and at the same time deflects it to where it is wanted. It combines high quality, pleasant appearance and efficient light distribution.

✦

AURORA is manufactured in two qualities, plain and polished. See table of sizes and thicknesses on page 13.

✦

Specify
"Mississippi"

Pattern Actual Size

Hylite Glass

In Hylite, Mississippi presents an exceptional pattern which will be found most effective for a variety of uses where ordinary transparent glass is not quite desirable. Its pattern, composed of minute "etching point" depressions, obstructs vision sufficiently to permit a reasonable amount of privacy, although the glass appears to have perfect transparency at first sight.

Because of the character of its pattern, Hylite is easier to clean than any other obscure or semi-obscure glass.

✦

Hylite is also made in Wire Glass in two thicknesses. Consult the tables on page 13 for exact sizes.

✦

Specify
"Mississippi"



For Full List of Sizes and Thicknesses of Mississippi Products See Page 13



Pattern Actual Size

Syenite Glass

A figured glass which, because of its irregular pattern, is suitable for many styles of architecture. It obstructs the vision and provides ample diffusion of light.

✦

Syenite is also made in polished glass, and in Wire Glass both plain and polished. Consult the tables on page 13 for the various styles and thicknesses of this effective pattern.

✦

Specify

"Mississippi"

Pattern Actual Size



Florentine Glass

This is one of the earliest styles of figured glass produced. It is still used in large quantities because of the efficient manner in which its attractive prismatic design diffuses light while obstructing the vision. Because of these qualities Florentine Glass is very effective for doors, transoms and partitions. Its rich design makes it adaptable for many styles of architecture.

✦

Florentine Glass and other Mississippi patterns can be obtained from leading glass distributors everywhere. Samples will be gladly sent upon request.

✦

To make certain of obtaining the best quality be sure to specify "Mississippi."

For Full List of Sizes and Thicknesses of Mississippi Products See Page 13



Pattern Actual Size

Pentecor Glass

A glass specially made for use in skylights, with ribs cut at an angle to collect and transmit the maximum amount of light without loss from total reflection. The light is deflected at right angles to the ribs, and will increase the light in a building, at a point fifty feet from the light source 130% as compared with plain glass. When installed in skylights set at the proper angle, Pentecor will conduct condensation and prevent dripping.

(See Chart page 11 and Graph page 12.)

✦

Pentecor is also made in Wire Glass. See table of sizes and thicknesses on page 13.

✦

Specify
"Mississippi"

Pattern Actual Size



Hammered Rough Glass

This is an example of superior Mississippi quality—no better plain Hammered Rough Glass is produced.

It is most appropriate for use in skylights and industrial buildings where distribution of working light is not an important consideration. Its design and fine qualities also make it popular to harmonize with certain styles of architecture.

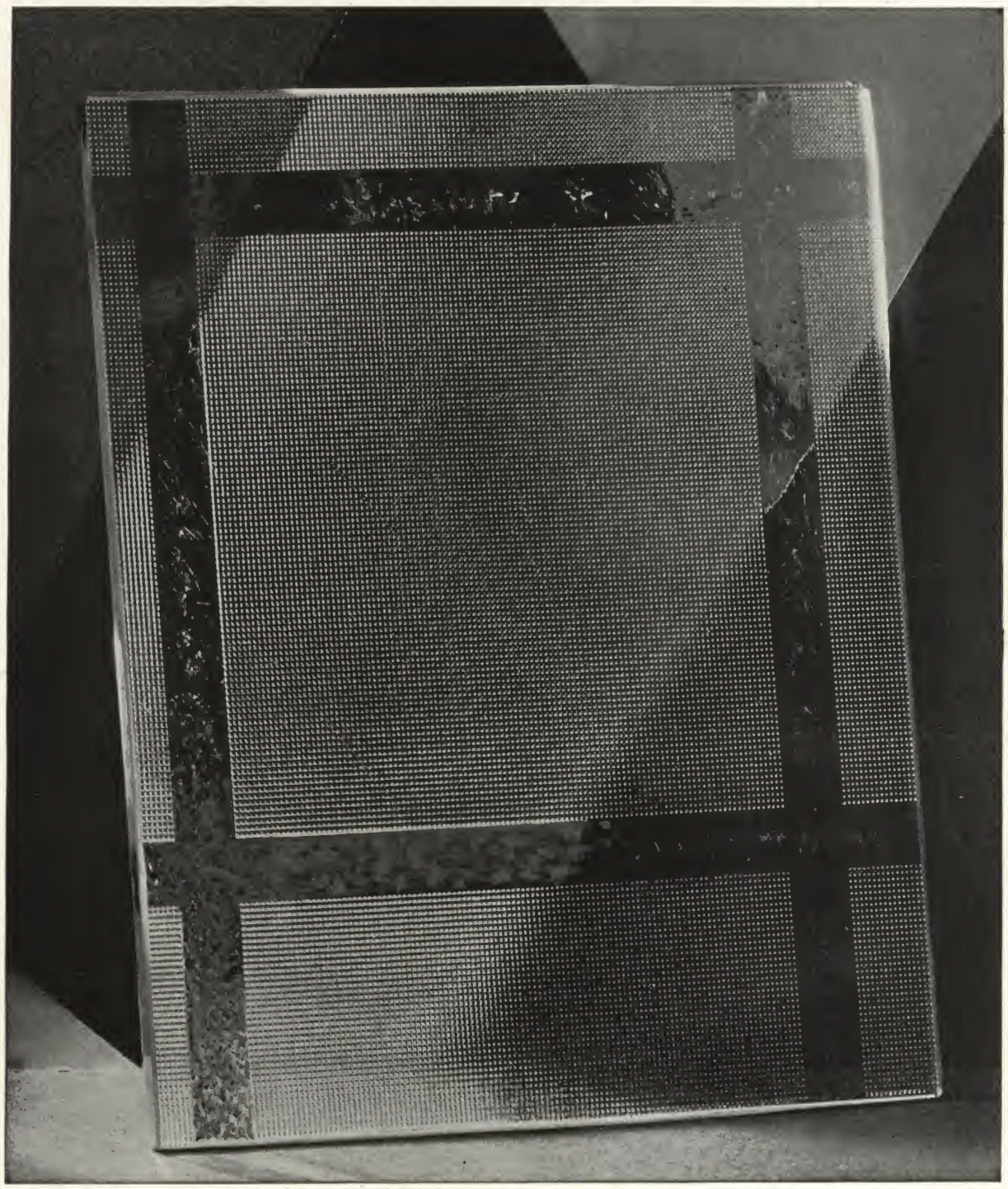
✦

Hammered Rough Glass is also manufactured in Wire Glass.

✦

Leading distributors everywhere can supply this and other Mississippi styles. Samples gladly sent upon request.

For Full List of Sizes and Thicknesses of Mississippi Products See Page 13



Pattern Actual Size

Translite Glass

A translucent glass of exceptional quality especially made for transoms. Its pattern of broad, semi-transparent stripes crossing in 3½-in. squares makes this an unusually effective glass for transoms—a place where too often no thought is given to the decorative value of the glass.

Translite adds the finishing touch to a job well done. It is easily kept clean, and having excellent light distributing qualities, can be effectively used for windows in halls, bathrooms, etc., where an effective design, good light and privacy are considerations.

✦

To make certain of obtaining the best quality be sure to

Specify

"Mississippi"

For Full List of Sizes and Thicknesses of Mississippi Products See Page 13



Pattern Actual Size

Ribbed Glass

A ribbed glass supreme in the quality of its material and in its cutting surface. It is a simple design which affords excellent light diffusion and is extensively used for skylights and windows in factories, power plants, and other industrial buildings.

✦

This pattern is also manufactured in Wire Glass.

✦

Leading distributors everywhere can supply this and other Mississippi products. Samples gladly sent upon request.

Pattern Actual Size



Prestlite

This type of glass has always been popular, but due to the former method of manufacture it has been too expensive. Modern methods of production have brought the price to a very fair level considering the excellence of quality.

✦

Specify
"Mississippi"

For Full List of Sizes and Thicknesses of Mississippi Products See Page 13



Pattern Actual Size

Silverlite

As the name implies it has a beautiful silvery surface full of life and brilliance, cheerful and most desirable for use where a feeling of happiness is to be created.

The transmission of light through this glass is excellent. It diffuses the light uniformly and is pleasing to the eye.

Of exceptional value for obscuring the vision.

✦

Specify
"Mississippi"

Pattern Actual Size

Luxlite

A very simple design almost smooth yet rough enough to obscure the vision. It is desirable for places where the cleaning of glass is at all difficult and a deep pattern would be objectionable.

✦

Specify
"Mississippi"



For Full List of Sizes and Thicknesses of Mississippi Products See Page 13



Pattern Actual Size

Dewlite

Designed especially for light diffusion, this is a particularly good glass for business buildings. It is very easily cleaned and gives a uniform distribution of daylight or artificial illumination.

✦

Specify
"Mississippi"

Pattern Actual Size



Solite

The simplicity of this design makes it attractive. It is desirable for working out artistic effects in screens and ornamental window design. It provides obscurity and ample light transmission.

✧

Specify
"Mississippi"

For Full List of Sizes and Thicknesses of Mississippi Products See Page 13

Glass Designed Especially for Industrial Buildings

After extensive tests of the light transmission and distribution qualities of every available type of glass had been made, the Mississippi Glass Company developed two new types of glass to accomplish definite results—Factrolite for vertical sash and Pentecor for pitched skylights.

The following charts and graphs, together with condensed data, will doubtless be of service when determining the glass to specify for special purposes.

REPORT NO. 24558

DISTRIBUTION OF LIGHT TRANSMITTED THROUGH FACTROLITE—INCIDENT LIGHT ON ROUGH SIDE OF GLASS—RELATIVE LIGHT INTENSITIES

Test of Factrolite—The tests were made by measuring the distribution of light in two planes perpendicular with each other, with light from an incandescent lamp 3 ft. distant falling normally upon and passing through the glasses. The relative light intensities are recorded in per cent of the normal (0°—normal—equals 100%).

Angles	First plane		Plane perpendicular to first plane	
	Right	Left	Right	Left
0 (normal)	100%		100%	
2½	60.5	86.5	85.2	75.4
5	41.8	51.8	41.0	28.9
7½	24.0	30.6	15.8	13.8
10	9.88	13.3	1.33	9.14
15	1.43	4.45	.39	1.31
20	.101	.81	.....	.....

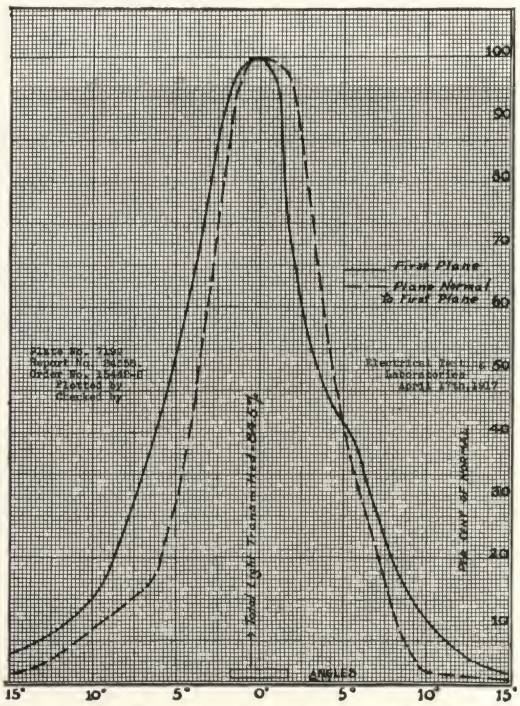


Chart Showing Efficiency in Light Transmission with Factrolite

Economy of Factrolite—Today, as never before, owners of industrial buildings are coming to realize the advantages of properly controlled daylight.

Whereas more heat is required to maintain a given temperature in a building with 80% of its wall area glass than is required for a wall area of 20% glass, this additional heat is required for only five months of the year, whereas with the 20% glass area, it is necessary to artificially light the building a large part of the time.

Factrolite breaks up the rays of the sun, diffusing the light and distributing it equally, so that glare is reduced to a minimum.

REPORT NO. 47571

LIGHT TRANSMISSION THROUGH NEW PENTECOR GLASS RENDERED TO THE MISSISSIPPI GLASS COMPANY ORDER NO. 42294-S

Distribution of light through the sample of sheet glass was made with the incident light falling normally upon rough side of glass. Measurements were made in plane at right angle to prism.

The light source used was a filament of small dimension, approximately 0.1x0.1 of an inch, and placed at a distance of three feet from the glass. Light distribution measurements were made by observations of the light through the glass. The observations were taken at different angles as noted on the graph.

The values of the light transmitted through the sample are in per cent of the maximum.

Transmission Factor

Light transmission measurements were made first with unidirectional light falling normally upon the surface of the glass and, second, with diffused light falling upon the glass. In making the latter measurements, a hemisphere of uniform brightness was employed.

Results of Test

The distribution data are shown in Table No. 1 and on Plate No. 22310 reproduced below.

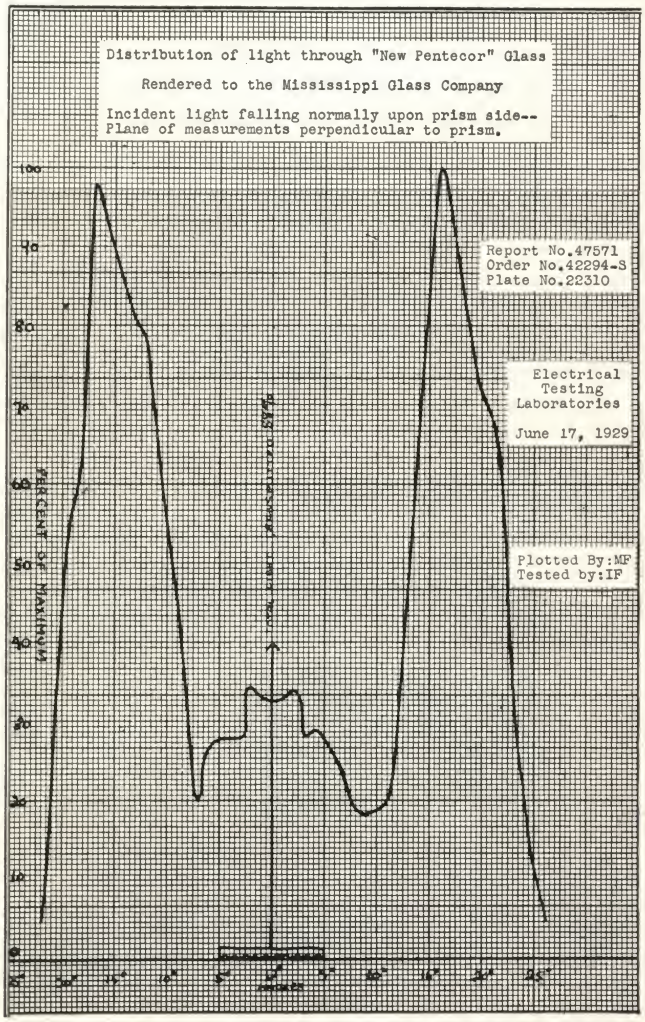
The light transmission values are shown on Table No. 2.

TABLE NO. 1
Distribution of Light Transmitted through "New Pentecor" Sheet Glass
Incident light normal to rough side of glass
Relative light intensities in per cent of maximum

Angles	Left	Right
0°	32.5	32.5
1	33.0	32.5
2	34.3	33.9
3	27.7	28.0
4	28.0	28.9
5	27.8	28.0
6	25.7	25.7
7	20.0	21.4
8	35.7	18.4
9	42.8	17.9
10	57.2	18.9
11	66.1	19.7
12	76.8	32.2
13	80.4	50.0
14	83.9	75.0
15	89.3	89.3
16	94.7	100.0
17	92.8	94.6
18	62.5	85.7
19	57.2	78.6
20	42.8	71.4
21	17.9	67.9
22	4.8	59.0
23		35.7
24		21.4
25		9.8
26		4.8

TABLE NO. 2
Transmission of Light

Sample	Side toward light	Transmission Factor	
		Unidirectional light	Diffused light
New Pentecor Glass	Rough	0.88	0.685
	Smooth	0.88	0.685



For Full List of Sizes and Thicknesses of Mississippi Products See Page 13

BRIEF OF REPORT NO. 28482

RENDERED TO THE MISSISSIPPI GLASS COMPANY
DISTRIBUTION OF ILLUMINATION THROUGH FIGURED SHEET GLASS WINDOWS IN A MODEL ROOM

ORDER NO. 16649-S

Object

An investigation to study the distribution of daylight illumination in a room with various types of ¼-in. figured sheet glass used in the window.

Test Room

Model, representing a room 50x100x14 ft.

Scale, 1 ft. = 25 ft. (24x48x7 in.)

Windows—Continuous on one side of room 3 ft. high, sill 4 ft. from floor.

Ceiling and walls—White gloss finish (commercial factory paint).

Floor—Brown linoleum (having reflection factor of average factory floor).

Source of Light

Concentrated filament incandescent lamp, representing the sun at 30 degrees from horizon. The intensity of the sun was approximately proportioned to the size of the room.

Sky uniformly bright within ±20%

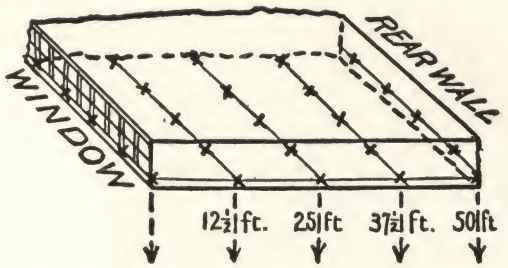
Light within the room—direct sunlight, 80%; skylight, 20%.

Tests

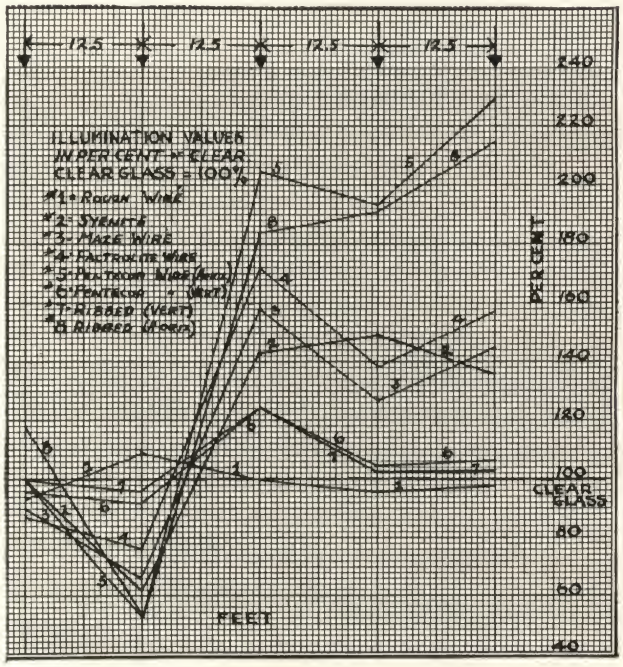
Test Stations in five lines as shown.

Horizontal illumination on working plane—equivalent to 40 in. above floor.

Transmission of light through glass samples.



AVERAGE HORIZONTAL ILLUMINATION OF LINES OF TEST STATIONS



	Transmission, per cent of clear	Average horizontal illumination of lines of test stations				
Distance from window in feet	...	0	12½	25	37½	50
Clear Glass	100	28	16.8	1.4	0.80	0.85
		Values in per cent of clear				
⅛ Hammered Rough Glass		107	107	107	99	106
⅛ Syenite Glass		100	62	143	149	136
¼ Maze Wire Glass		90	65	158	127	145
¼ Factrolite Wire Glass		89	75	172	138	157
¼ Pentecor Wire Glass, glazed horizontally		100	52	204	193	230
¼ Pentecor Wire Glass, glazed vertically		96	92	123	104	106
¼ Ribbed Glass, glazed vertically		100	96	124	101	103
¼ Ribbed Glass, glazed horizontally		118	52	183	191	215

For Full List of Sizes and Thicknesses of Mississippi Products See Page 13

MISSISSIPPI PRODUCTS

Thicknesses, maximum sizes and approximate weights of Wire Glass and Figured Glass

POLISHED FIGURED GLASS

Style	Thickness inch	Maximum width, inches	Maximum length, inches	Approximate weight per sq. ft., lbs.
Apex .....about	1/4	50	100	4
Aurora	1/4	50	100	4
Syenite	1/4	50	100	4
Prestlite	1/4	50	100	4

PLAIN FIGURED GLASS

Aurora	1/8	48	132	2
"	3/16	60	144	2 1/2
"	1/4	60	144	3 1/4
Factrolite	1/8	48	132	2
"	3/16	48	144	2 1/2
"	1/4	48	144	3 1/4
Florentine	1/8	48	132	2
"	3/16	48	144	2 1/2
Hammered Rough.....	1/8	48	132	2
" "	3/16	48	144	2 1/2
" "	1/4	48	144	3 1/4
" "	3/8	48	144	5 1/4
" "	1/2	48	132	7 1/2
Hylite	1/8	48	132	2
"	3/16	60	144	2 1/2
"	1/4	60	144	3 1/4
Maze	1/8	48	132	2
"	3/16	60	144	2 1/2
Pentecor	1/8	60	132	2
"	3/16	60	144	2 1/2
Ribbed	1/8	48	132	2
"	3/16	48	144	2 1/2
"	1/4	48	144	3 1/4
"	3/8	48	144	5 1/4
"	1/2	48	132	7 1/2
Syenite	1/8	48	132	2
"	3/16	48	144	2 1/2
Translite	3/16	60	144	2 1/2
Luxlite	1/8	48	132	2
"	3/16	48	144	2 1/2
"	1/4	48	144	3 1/4
Silverlite	1/8	48	132	2
"	3/16	48	144	2 1/2
"	1/4	48	144	3 1/4
Dewlite	1/8	48	132	2
"	3/16	48	144	2 1/2
"	1/4	48	144	3 1/4
Artex	3/16	48	144	2 1/2
Solite	1/8	48	132	2
"	3/16	48	144	2 1/2
"	1/4	48	144	3 1/4

"WIRE GLASS"

Style	Thickness inch	Maximum width, inches	Maximum length, inches	Approximate weight per sq. ft., lbs.
Factrolite	1/4	48	144	3 3/4
Hammered Rough.....	1/4	48	144	3 3/4
" "	3/8	48	144	5 1/4
Hylite	1/4	48	144	3 3/4
Maze	1/4	48	144	3 3/4
Pentecor	1/4	48	144	3 3/4
Polished	5/16	50	132	4
"	5/8	30	72	8
Ribbed	1/4	48	144	3 3/4
"	3/8	48	144	5 1/4
Syenite, Plain.....	1/4	48	144	3 3/4
Syenite, Polished.....	5/16	50	144	4

"MISCO" WIRE GLASS

Misco Wire Glass Polished.....	1/4	50	132	4

Note: Heavy Polished and Figured Wire Glass Made Special.

Select the proper glass for the purpose intended from the Mississippi styles shown in this catalogue. To make certain of obtaining the best quality always

Specify

"MISSISSIPPI"

Polished Wire Glass
Syenite Wire Glass
Syenite Polished Wire Glass
Maze Wire Glass
Factrolite Wire Glass
Pentecor Wire Glass
Hammered Rough Wire Glass
Ribbed Wire Glass
Hylite Wire Glass
Aurora
Syenite

Syenite Polished
Apex
Maze
Florentine
Figure No. 2
Ondoyant
Factrolite
Pentecor
Ribbed
Hammered Rough
Hylite

Translite

"Misco" Wire Glass Polished

MISSISSIPPI GLASS COMPANY

CHICAGO NEW YORK ST. LOUIS

For Full List of Sizes and Thicknesses of Mississippi Products See Page 13

MANUFACTURERS GLASS COMPANY

Manufacturers of Pressed Lens and Pressed Lensrib Glass
A Diffusing Glass for Daylight Illumination
38 South Dearborn Street, CHICAGO, ILL.
SUPPLIED BY LEADING GLASS JOBBERS EVERYWHERE

LIGHT FOR SEEING



Pressed Lensrib Wire Glass Installed in the Testing Laboratory, Engineering Building, University of Rochester, Rochester, N. Y.
GORDON & KAELBER, Architects

Pressed Lensrib Wire Glass should be used in the skylights, monitor sash, and side walls to produce a shadowless light without glare. Real diffused daylight illumination is important to any interior, especially to high cost labor engaged in machine work of any kind, or any process operations in industrial plants of every nature.

Where Pressed Lensrib Wire is specified and used for *skylights, ceilings and side walls,* daylight intensities as measured in foot candles may be increased as much as 100% without glare. The Pressed Lensrib product has no equal in its power of multiple refraction, to transmit to interiors a quality of natural daylight without glare or shadows, corresponding closely to exterior conditions. The diffusing properties of this glass bear the same relation to ordinary glass, as rustless steel to kindred products.

Adequate daylight may be had for all process operations whether *machine tool, aniline dye production, chemical laboratories, color photography, drafting room, printing establishments,* etc., by using Lensrib Diffusing Glass. No shades required.

The optical qualities of this glass result from a special lens combination, light reacting from lens to lens with an internal focus, and no glare, marking a definite process in multiple refraction and redirection of light without shadows.



Pressed Lensrib Wire Glass
Specify ¼-in. Lensrib Glass, plain and wired

New Convention Hall, Philadelphia, Pa.

The illuminating engineers selected Pressed Lensrib Wire Glass, 10,000 sq. ft., for this huge ceiling, and from red, white, and blue lamps, reproduced a remarkable quality of daylight illumination (no skylights) of 20-ft. candle intensity. The diffusing or optical qualities of this glass are not matched by any other glass made and in this major operation an atmosphere of perfect daylight illumination has been achieved. See G. E. Magazine "Light" of December, 1931.

Nelson Memorial Art Museum, Kansas City, Mo.—Wight & Wight, architects, 63 rooms, nearing completion. Has no skylight, but reproduces perfect daylight illumination from Pressed Lensrib Glass ceilings by the use of reflecting lamps with daylight filter. The even distribution of light on the side walls without shadows or uneven curves excels probably any other installations ever made in art gallery illumination. Write for details.

High Schools

Pressed Lensrib is being used most successfully in upper, exterior sash of class rooms to increase illumination of underlighted desks farthest removed from windows; no glare and no shades necessary. Can furnish list of more than a hundred schools where architects have a quality of illumination in class rooms never before experienced.



Pressed Lens Wire Glass
Specify $\frac{3}{16}$-in. Pressed Lens Glass, plain and wired

Send for Samples

MAGNALITE—DIFFUSING-OBSCURING GLASS

(REGISTERED U. S. PATENT OFFICE)

J. Merrill Richards
119 West First Street
BOSTON, MASS.

American 3 Way-Luxfer Prism Co.
1301-1305 South 55th Court, CICERO, ILL.
517 West 45th Street, NEW YORK, N. Y.

Product

MAGNALITE, a Diffusing-Obscuring Glass.

For other 3 Way pages, see Manufacturers' Index.

For Skylights, see J. Merrill Richards in Manufacturers' Index.

Description

Magnalite is a clear sheet glass with both surfaces smooth and crossed by scientifically designed cylindrical lenses at right angles to each other on either surface. Type "A" Magnalite is manufactured with the lenses approximately ½ in. on centers, and Type "B" approximately ¼ in. on centers.

Purpose

Magnalite is the result of scientific experiments to produce a glass to accomplish five definite results:

Even Light Diffusion—The scientific construction of the lenses produces uniform diffusion of light over areas in shape similar to glass openings—see diagrams.

Maximum Light Transmission—The lenses are designed to allow the maximum of light transmission.

Cleanability—Containing no pockets in which dirt can collect, Magnalite is very easily cleaned.

Obscurity—The cylindrical lenses distort vision to make it obscure in the true sense of the word.

Heat Diffusion—Magnalite diffuses heat from sun rays.

New Process Manufacture

All types of Magnalite Diffusing-Obscuring Glass are manufactured by the Mississippi Glass Company by a new Continuous Process which produces a truly remarkable glass. The cylindrical lenses are perfectly reproduced and the finish on either surface has a brilliant lustre. New process Magnalite is a quality glass.

Adaptability of Magnalite

(1) **For Ceiling Lights**—Magnalite forms a perfect screen and hides all steel and floodlight equipment, thoroughly diffusing the light from illuminating units, as well as daylight.

(2) **For Windows**—Magnalite will redirect light from acute angles, diffuse sunlight to produce an even work-light and light dark corners.

(3) **For Partitions**—Magnalite is so obscuring that absolute privacy is assured.

(4) **For Skylights**—Magnalite "A" wired will reduce interior sun glare 86.4%. The underside corrugations serve as condensation leads. The diffused light will be spread over an area the shape of the skylight opening.

Specification

Magnalite Type ["A"] ["A" Wired] ["B"] as distributed by J. Merrill Richards, 119 W. First St., Boston, Mass., or the American 3 Way-Luxfer Prism Co., New York, and Cicero, Ill. Lettering surfaces to have lenses in a vertical position. Outside sash to be glazed with the lenses vertical on the outside.

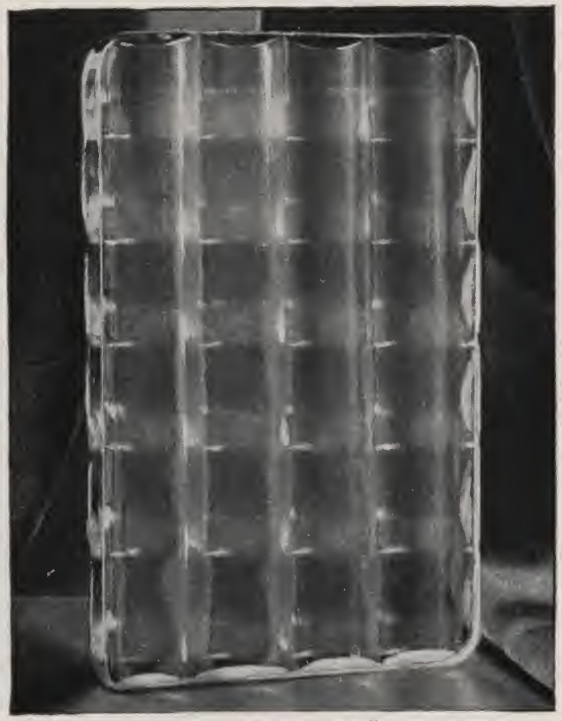
Distribution and Samples

Magnalite is sold by leading glass dealers everywhere.

Write to your leading glass dealer or direct to us.

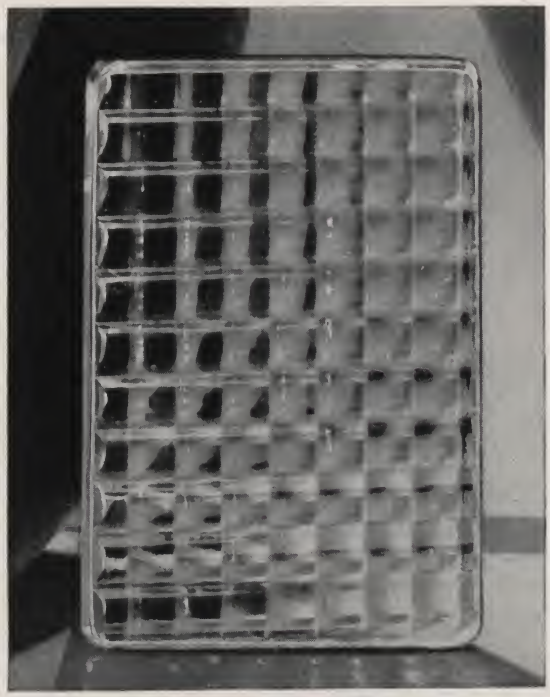
DIMENSIONS AND WEIGHTS OF "MAGNALITE" GLASS

Type	Approximate thickness, in.	Maximum size sheets, in.		Approximate weight per sq. ft., lb.
		Wide	Long	
"A" Plain	¼	58	132	2¾
"A" Wired	5/16	56	132	4½
"B" Plain	¼	58	132	2¾



Magnalite Type "A"

Designed principally for use in large openings and locations distant from vision. Wired sheets of Type "A" for skylights and locations where a wire glass is required



Magnalite Type "B"

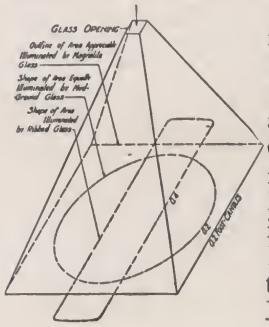
Designed for general use, where a design smaller than Type "A" is more architecturally correct. Also suitable in locations close to vision

LIGHT DIFFUSION TESTS

Isolux Diagrams (Contour Maps)

Method

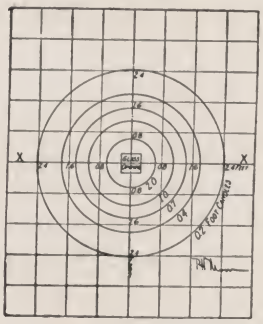
Tests made in a photometer room, two stories high, painted dead black to eliminate reflected light. Source of light was a concentrated filament 1000-watt, 115-volt, P.S.—40 Mazda lamp without reflector mounted base up, filament 4 ft. above test opening. Glass opening 6 in. square. Plane of measurements 6 ft. 5 in. below opening. Measurements made by Macbeth illuminometer. Tests conducted by P. H. Moon, in charge of Industrial Lighting at Massachusetts Institute of Technology.

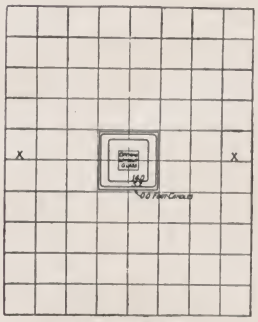


Right:

Mud Ground Glass

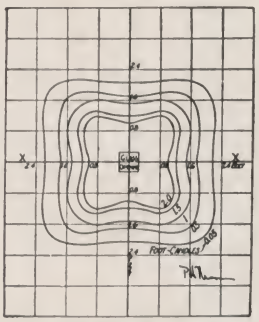
Mud ground glass gives a concentric distribution, as might be expected from its nature. The maximum illumination is about the same as that obtained with Magnalite "A," but it will be noted that the light is not thrown into the corners as with Magnalite





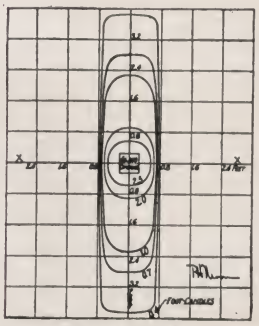
Without Glass

No glass. Without glass all light falls within a square about 1 ft. 4 in. on a side and the illumination is uniform over nearly all this area. This corresponds roughly to direct sunlight through an open window or a window with plain glass



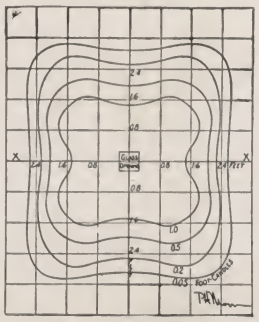
Magnalite "A"

Light is diffused evenly over an area approximately the shape of glass opening. Light is directed into corners. Illumination directly beneath glass (corresponding to sun glare) is reduced 86.4% in comparison with the unobstructed opening. Area of appreciable* illumination is increased approximately 10 times over its value without glass



Ribbed Glass

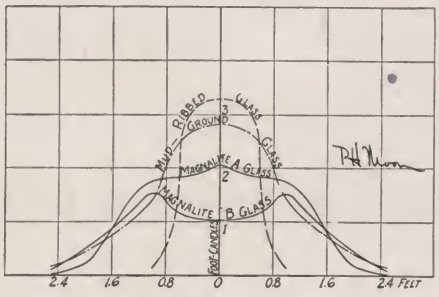
Ribbed glass throws light into a band with its long dimension perpendicular to direction of ribs. A fairly good but narrow rectangular distribution is obtained. Brightness of illuminated area directly below window is greater than with Magnalite



Magnalite "B"

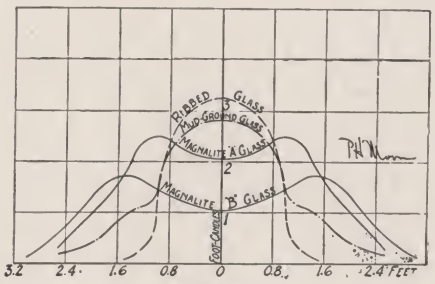
The characteristics are similar to those of Magnalite "A," but the area illuminated is approximately 11% greater and the interior sun glare is reduced slightly more (by 90%)

Profile Diagrams



X Axis

Note how light is softened and spread to the sides by Magnalite



45° Axis

Showing how Magnalite throws light into the corners

Summary

Magnalite produces an even light distribution over a large area which is approximately the same shape as the glass opening. Light is thrown into corners. Most figured glasses transmit the greatest amount of light in line with the light source.

Magnalite softens this direct light and spreads it over a large area, so that Magnalite "A" cuts down the maximum light 35% more than mud ground glass and 36% more than ribbed glass; while Magnalite "B" reduces the maximum 46% more than mud ground, and 55% more than ribbed. With Magnalite the area illuminated to an appreciable extent* is over 2½ times as great as that with mud ground glass and twice as great as with ribbed glass. The illuminating units are *not visible* through Magnalite. Magnalite is easily cleaned and is always efficient.

*The area considered is the area illuminated in the tests to one footcandle or greater, corresponding to about 6½% of the illumination obtained directly beneath the unglazed opening.

Glass	Maximum Illumination	Angle of diffusion on 45° axis	Area illuminated
No glass.....	15.4	0°	2.2 sq. ft.
Magnalite "A".	2.1	22°	9.0 sq. ft.
Magnalite "B".	1.5	24°	10.2 sq. ft.
Mud ground...	2.8	12°	3.8 sq. ft.
Ribbed	3.3	4°	5.9 sq. ft.

TRANSMISSION TEST

Conducted by Electrical Testing Laboratories, New York

Sample	At 0° Incidence Unidirectional light	Diffused light
Magnalite "A".....	91%	79%
Magnalite "B".....	87½%	73%

PLATE GLASS MANUFACTURERS OF AMERICA

First National Bank Building
PITTSBURGH, PA.

For Manufacturers of Plate Glass see pages of Libbey-Owens-Ford Glass Company and Pittsburgh Plate Glass Company

Why Plate Glass for Windows

The primary purpose of glass in windows is to admit light, to afford protection from the elements and to allow a clear vision. The most suitable glass is that which will transmit the greatest amount of light and afford the clearest view.

Plate Glass is not merely a good quality glass. It is a unique product: a glass *ground and polished* to a truly flat surface and lustrous finish.

Plate glass does not distort objects viewed through it at any angle.

In addition to practical advantages, plate glass has another advantage which is receiving more and more consideration from architects, that is, advantage of beauty. This quality of beauty is due to the clean-cut and distinct reflection free from distortion.

Plate glass increases the value of a building or a residence far more than the additional cost of the plate glass. A building glazed with plate glass is more easily rented or sold.



Economies of Plate Glass

Breakage—Because of its higher strength and its resistance to blows, plate glass does not break easily.

Cleaning—Its highly polished surface allows cleaning with less labor.

Quiet—Its extra thickness keeps out more noise and insures quieter rooms.

Heating—Since plate glass is ordinarily thicker, it reduces heat losses.

Beauty—Crystal clear—no distortion of objects viewed through it. Looking through plate glass is like looking through the open air itself—the eye is not conscious of its presence.

Cost—Total cost of glazing is only about one per cent of the total cost of the building. The additional cost for plate glass is a negligible proportion of the total cost.



Reflections of Lights and Shadows on Polished Surfaces of Plate Glass

Construction Details for Plate Glass

When making designs calling for the use of plate glass, several items of construction details must be considered.

(1) Supporting structure must be sufficiently strong and rigid to withstand any wind pressures, vibrations and other strains that might exist.

(2) Provision must be made for expansion and contraction, particularly in large sheets.

(3) Provision must be made for easy replacement in case of breakage.

(4) Do not locate a large sheet where it will be difficult to set.

(5) Provide ventilation on both sides of glass. This ordinarily does not require consideration, but in wainscoting and with mirrors, ventilation on the back is important—do not set glass or mirrors in a surface to surface construction.

(6) Provide accessibility for cleaning.

Care of Plate Glass Before Setting

In writing his specifications, the architect should provide not only that plate glass is to be used but that proper care should be exercised that it shall not be damaged before setting. The following items should be covered:

(1) Plate glass shall not be laid flat but shall be stood on edge with paper between sheets.

(2) Glass shall not be laid flat (for cutting or other purposes) upon a table or other object that has not been previously covered with a clean, soft protection of some sort.

(3) No dust or dirt shall be allowed to accumulate upon glass.

(4) Plates shall be handled one at a time and surfaces shall never be allowed in contact.

(5) Glass shall be unpacked as soon as delivered, cleaned and dried if necessary, and stored on edge in a dry place. This to avoid what is known as "stain."

(6) Alkalis attack the polished surface of plate glass and should not be allowed near it—especially is this true of ammonia fumes.

United States Government Specification for Plate Glass for Glazing Purposes

Classification

Polished Plate Glass: second silvering quality, glazing quality.

Definitions of the General Classes of Polished Plate Glass

Plate Glass. Transparent, flat, relatively thin glass having plane polished surfaces and showing no distortion of vision when viewing objects through it at any angle.

Plate Glass is made at present by casting and rolling large sheets periodically or by rolling a continuous sheet. The sheets are then ground and polished.

Detailed Specifications of Polished Plate Glass

General Principles Involved in Grading Glass—All flat glass contains some imperfections and the principle employed in grading is to exclude all defects that would be objectionable in a given grade. This is difficult to do since there are no sharp lines of demarcation between grades, and experienced inspectors will differ in judgment as the quality of the glass approaches the limits of the grades. Small lights must be quite free from imperfections as compared with larger ones, and the center of any sheet should be clear, whereas the edges may contain more pronounced defects.

Method of Examination—The method of examination is described in these specifications in order to make the results more uniform, and defines the condition under which glass should be examined because the distance from the glass, the angle between the glass and the line of sight, and the intensity of light all affect the visibility of imperfections.

These specifications should be interpreted by examining the glass in the following manner, with reference to the definitions of defects listed in the glossary:

The glass should be examined when placed in a position similar to that of a glazed light with the observer's eye on a level with the center of the sheet, and looking through the glass from a distance of about 36 in. into the light from a clear sky without any sun or any close background.

The visibility of waves, lines or cords depends chiefly upon

the angle of observation, and the intensity of these defects can be classified on this basis. The values given for angles are the angles the line of sight makes with the sheet of glass when in a vertical position. Slight movement of the head horizontally through an angle of two or three degrees will make waves or lines more perceptible.

Acceptance or Rejection—Acceptance or rejection of a shipment or delivery shall be based on an examination of the following quantities:

For orders of 100 lights or less, all shall be examined; for orders of 101 to 500 lights, at least 50% shall be examined, for orders of 501 or more lights, at least 25% shall be examined. Boxes shall be selected from the shipment at random.

If not more than 10% of the lights examined are below quality, the shipment shall be accepted provided the lights below the specified grade are not distinctly below the upper limit of the next lower grade.

If, however, an entire shipment of 500 lights or more is examined, not more than 5% may be below quality.

Specifications for Polished Plate Glass

Sizes and Thickness—The standard of thicknesses of plate glass shall be ⅛, 3/16, ¼, ⅜, ½, ⅝, ¾, 1, 1¼ and 1½ in. Sheets are available ¼ in. thick in sizes having a maximum area of 250 sq. ft. Glass of ¼-in. thickness may be furnished having almost any desired dimension under the following maximums: 120x280 in., 144x260 in., 160x240 in.

The standard stock thickness for glazing purposes is ¼ in., but this may vary between 5/32 and 9/32 in.

Tolerance in Thickness—When a certain thickness is specified for a specific purpose, the tolerance in thickness shall be half the difference allowed on standard thickness, although ¼-in. glass for glazing purposes is accepted within the latitude of 5/32 to 9/32 in. The general variation in thickness should not be more than 1/32 in. for individual lights under 10 sq. ft., in thickness up to ¼ in. The variation in lights over ¼ in. in thickness should not exceed one-half the total tolerance for that thickness.

Polished plate glass ¼, ⅛ and 3/16 in. thick is carried in stock in the larger cities.

Tolerances in Dimensions—Variation from dimensions ordered shall not be more than 1/32 in. per ⅛-in. thickness.

Grades—Plate glass shall be furnished for glazing purposes in one of two grades as specified. These grades will be known as second silvering and glazing qualities.

Second silvering quality is invariably used where the highest standard of glazing is required and imperfections are discoverable only on close inspection. This quality is rarely sold for glazing purposes in sizes over 20 sq. ft. Glazing quality represents the usual selection of plate glass supplied when quality is not otherwise definitely specified.

As allowable tolerances in quality must vary considerably with size of sheet required, different specifications will apply in each of the following four divisions according to size:

Division I. Sheets up to and including 10 sq. ft. in area.

Division II. Sheets having an area greater than 10 sq. ft. but not greater than 25 sq. ft.

Division III. Sheets having an area greater than 25 sq. ft., but not greater than 75 sq. ft.

Division IV. Sheets having an area greater than 75 sq. ft.

Division I. (Sizes Up to and Including 10 Sq. Ft.)—*Second Silvering Quality*—This glass shall not contain any major defects. The central area of this glass may contain only well scattered seeds. Ream, skim, short finish, and scratches which can not be removed by buffing, are not permissible. The edges may contain coarse seeds, but none shall be larger than 1/32 in. in diameter.

Glazing Quality—The central area of this quality may contain numerous scattered seed, including an occasional coarse seed, but no heavy seed. Small bubbles may occur on the edge. Stones, large bubbles, skim, ream, or long or heavy scratches are not permissible. Faint strings in the corners or upper edge of the light are permissible. The polish shall not show areas of short finish.

Division II. (Sizes from 10 Sq. Ft. to 25 Sq. Ft., Inclusive)—*Second Silvering Quality*—The central area of this quality may contain more numerous fine seed than the small sizes and an occasional coarse seed. The edges may contain occasional small bubbles and fine strings. No heavy defects or scratches which can not be removed by buffing are permissible. The polish must be good and free from visible short finish.

Glazing Quality—The central area may contain small bubbles and fine strings or ream which do not give visible distortion when looking straight through the glass, but no long or heavy scratches. The edges may contain bubbles over 3/32 in., visible scratches shorter than 10 in., small areas of ream, strings, and small stones not larger than 1/32 in., but these defects should not be grouped nor interfere with the vision. The polish over the central area should be good, but patches of light short finish may be present about the edges.

General—None of the above grades or sizes may contain any heavy or long lines, streaks of ream, any bubbles larger than ⅛ in., visible poor polish, open bubbles, areas of skim, or stones over 3/32 in. in diameter.

Division III (Sizes from 25 Sq. Ft. to 75 Sq. Ft.)—*Glazing Quality*—Lights of this size may contain numerous visible and larger imperfections not allowed in the smaller lights. But these must not be grouped or so prominent that they noticeably interfere with the vision. The central area of the plate shall be free from these larger defects.

The sheets may contain seed of any size, but not heavy seed except in relatively small patches on the outer border of the sheet, occasional bubbles up to ⅛ in. in the center and up to 3/16 in. on the borders, strings, ream and skim in very limited areas if not causing a deformation of objects viewed through the plate, occasional scratches and small stones under 1/16 in.

Heavy ream, heavy cords, bubbles larger than 3/16 in. in diameter, stones larger than 1/16 in. in diameter, large fire cracks, areas of unpolished glass, easily visible poor polish, large open bubbles, or sand holes, are not permitted. The large defects should be confined to the upper edge and upper corners of the sheet, the lower and central areas to be relatively free from major defects.

Division IV. (Sizes Greater than 75 Sq. Ft.)—Sheets larger than 75 sq. ft. may contain defects of almost any kind except that they must not show large areas of heavy seed or bubbles, nor have any defects which will cause spontaneous breakage, such as skim or large stones (⅛ in. in diameter) or show any areas of unpolished glass.

Glossary of Terms Used in These Specifications

The following terms shall be used in specifications:

Plate Glass—Seeds, short finish, skim, strings, scratches, bubbles, open bubbles, ream, stones, fire cracks, sand holes.

Bubbles—Gas inclusions in any rolled glass. These inclusions are practically always spherical and brilliant in appearance. The term applies to all such inclusions larger than 1/32 in. in diameter. The term small bubbles (commonly known as boil) refers to sizes between 1/32 in. and 3/32 in.

Seeds—Minute bubbles less than 1/32 in. in diameter. Fine seeds are visible only on close inspection, usually appearing as small specks and are an inherent defect in the best quality of plate glass. Seed about 1/64 in. to 1/32 in. in diameter are usually considered as coarse seed.

Open Bubbles—Bubbles which have been broken into by grinding, leaving a hemispherical hole in the glass surface.

Skim—Streaks of dense seed with accompanying small bubbles.

Strings—Wavy, transparent lines appearing as though a thread of glass had been incorporated into the sheet.

Cords—Heavy strings incorporated in the sheet, occurring without any regularity of direction, and appearing to be of considerable thickness rather than on the surface.

Ream—An area of unhomogeneous glass incorporated in the sheet producing a wavy appearance.

Scratches—Any marking or tearing of the surface appearing as though it had been done by either a sharp or rough instrument. Scratches occur on sheet glass in all degrees from various accidental causes.

Short Finish—Insufficient polish or lack of brilliancy; improperly finished surface which has the appearance of being slightly pitted and wavy when the surface is viewed in reflected light. These indentations, which are slight, have a polished rather than a ground surface, but the general effect is a slight dulling of the surface. Poor polish is usually caused by improper grinding.

Stones—Any opaque or partially melted particle of rock, clay or batch ingredient imbedded in the glass.

Fire Cracks—Small cracks penetrating the surface of the sheet. Usually in the shape of short-hooked crescents. Caused by sudden heating or chilling of the surface.

Sand Holes—Rough spots on the polished surface produced during coarse grinding which fine grinding did not later remove; due, to some extent, to coarse grains of grinding sand becoming mixed with finer grades.

Central Area of Sheet—This term is used with slightly different interpretation with reference to plate or window glass. In plate glass the central area is considered to form an oval or circle centered on the sheet whose axes or diameters do not exceed 80% of the over-all dimension. This allows a fairly large area at the corners, which may have imperfections not allowed in the central area.

AMERICAN WINDOW GLASS COMPANY

GENERAL OFFICES
Farmers Bank Building, PITTSBURGH, PA.

DISTRICT SALES OFFICES

ATLANTA, GA. BOSTON, MASS. CHICAGO, ILL. LOS ANGELES, CAL. NEW ORLEANS, LA. NEW YORK, N. Y. PORTLAND, ORE. ST. LOUIS, MO. SAN FRANCISCO, CAL. SEATTLE, WASH.

EXPORT OFFICES

SAN JUAN, PORTO RICO HAVANA, CUBA

FACTORIES

HARTFORD CITY, IND. ARNOLD, PA. BELLE VERNON, PA. JEANNETTE, PA.

Products

LUSTRAGLASS—a flat drawn clear sheet window glass (the ultra-violet-ray window glass).

PHOTO GLASS—for camera use, lantern slides, and diagnostic X-ray plates.

LUSTRAWHITE PICTURE GLASS, in superfine and selected commercial qualities.

GREENHOUSE GLASS—"The whitest of all."

CRYSTAL SHEET—$\frac{3}{16}$ in. and $\frac{7}{32}$ in. thickness.

BULB EDGE GLASS—for shelving, window ventilators, counter partitions and wherever glass is used without a frame.

ORNAMENTAL ETCHED GLASS, GROUND GLASS and CHIPPED GLASS—for doors, partitions and other special uses where a translucent glass is required.

ARMOR-LITE SAFETY GLASS—for automobiles, airplanes, boats, asylums and factories.

ARMOR-LITE BULLET-PROOF GLASS—for bank protection, prisons and armored cars.

TINTAGLASS—a laminated glass product furnished in a variety of beautiful colors for decorative purposes—wall tile, table and dresser tops, shelving, display cases, etc.

Send for special Tintaglass circular.

LUSTRAGLASS (FLAT DRAWN) ULTRA-VIOLET-RAY WINDOW GLASS

Process and Production of Lustraglass

The new flat drawn clear sheet window glass now manufactured by this company is trade named Lustraglass. It transmits a substantial amount of the shorter, more valuable ultra-violet rays of sunlight which are shut out by ordinary window glass (see table below), a better, flatter, clearer, more lustrous glass at no greater cost than the ordinary window glass. The greenish cast characteristic of window glass has been almost entirely eliminated. This "whiteness," this absence of color alone, makes Lustraglass a more beautiful and desirable glass for windows. Lustraglass is produced by an improved vertical drawn machine process assuring absolute flatness, uniform thickness and quality.

TRANSMISSION IN THE ULTRA-VIOLET SPECTRUM OF LUSTRAGLASS

Determined Radiometrically by Using a Quartz Mercury Arc Lamp, a Quartz Spectrometer and a Vacuum Thermopile

It is generally recognized that the most effective ultra-violet rays in sunlight are those having a wave length from 313 mu. down to 302 mu. Ordinary window glass transmits practically nothing below 313 mu. Ultra-violet rays are seldom available in sunlight below 302 mu.

Wave length in millimicrons (mu.)

Approximate range of most effective ultra-violet rays in sunlight			
Thickness (Note A)	313 mu.	(Note B) 310 mu.	302 mu.
10 oz. (.050 in.)	36%	27%	10.5%
13 oz. (.062 in.)	31%	23%	7%
16 oz. (.077 in.)	22%	16%	3.2%
Single strength (.090 in.)	18%	12%	2.3%
Double strength (.123 in.)	9%	5.5%	.4%

Note A: Approximately 75% of all window glass used is in single strength thickness. 10-oz. thickness may be used for lights up to 12 in. square; 13-oz. up to 18 in. square; 16-oz. up to 24x30 in. These thicknesses are slightly higher in price than standard single and double strength. Percentages given are average for thickness indicated.

Note B: Ordinary window glass is almost entirely opaque at this point of measurement.

Tests

Scientific tests with poultry and plants have proved the effectiveness of Lustraglass transmission (A. W. G. Co. Booklet P-332). Our new booklet illustrates the marked increase in health, growth and strength of plants and poultry raised under Lustraglass as contrasted with similar specimens raised under ordinary window glass.

Flatness of Lustraglass

The flat drawn sheet glass produced by the AMERICAN WINDOW GLASS COMPANY'S vertical drawn process is positively flat without curvature, bow or reverse curve.

Glazing of Lustraglass

Lustraglass can be glazed either side out, with the assurance that the appearance and clear visibility will be of the same high standard whether viewed from the inside or outside of a building.

Chemical and Physical Properties of Lustraglass

The chemical properties of Lustraglass assure maximum resistance to discoloration, fade, stain or rust. Tests of the physical properties of this glass demonstrate great tensile strength and a high modulus of rupture enabling it to withstand maximum wind pressures.

Identification Labels

Every light of *genuine* Lustraglass, the ultra-violet ray window glass, is labeled to identify its genuineness. This is for the protection of the purchaser.

Packing

Lustraglass is packed with specially processed corrugated board instead of straw. This reduces breakage and freight charges. Regardless of how long it is stored, it minimizes the possibility of fade or stain under normal warehouse conditions.

Grades and Qualities

"AA" Quality—Because of the very high standard of grading adopted by this company, it is impossible to supply "AA" quality in sufficient quantities to enable us to fill orders for it quickly. Buyers who insist upon having this quality should order in advance of their needs.

"A" Quality—The improved vertical drawn process developed by this company produces a glass entirely free from many of the defects permitted in Government Specifications. Lustraglass is free from strings and lines, and is a perfectly flat, white, high lustre product of uniform thickness and appearance and will greatly enhance the appearance of any building in which it is used.

"B" Quality—This quality is free from all glaring defects but contains imperfections which would prevent its being graded as "AA" quality or "A" quality.

Defects Prohibited in All Grades

Defects that mar the general appearance of the glass (considering the quality specified) or cause excessive breakage are prohibited in all grades of window glass manufactured by this company.

WEIGHTS

Table 1—Average weight of clear sheet window glass (given in ounces per square foot).

Single Strength	19 oz.
Double Strength	26 oz.
Crystal Sheet	39 oz.
Crystal Sheet	45 oz.

Note: The above weights are subject to the usual average allowable variations.

The maximum dimensions recommended are:

	Width, (in inches)	Length, (in inches)
Single Strength	40	50
Double Strength	60	80
Crystal Sheet, $\frac{3}{16}$ in. and $\frac{7}{32}$ in.	78	120

Dimensions

"Glass must be cut to dimensions ordered with an allowable tolerance of $\frac{1}{32}$ in. per $\frac{1}{8}$-in. thickness."

Inspection

The glass, after being cut and inspected by experienced cutters, is re-inspected by men especially trained for that work. The quality is again checked by the chief inspector.

New Booklet P-332

This interesting new booklet gives full details concerning a series of experiments with chicks. Results showed that Lustraglass does transmit an effective volume of the biologically valuable ultra-violet rays of sunlight. Write for your copy.

Suggested Specifications

All window glass used in this building shall be Lustraglass, a product of AMERICAN WINDOW GLASS COMPANY, and shall be (here specify the thickness and quality of glass desired).

The Lustraglass label must appear on each light of Lustraglass.

Note: If the AMERICAN WINDOW GLASS COMPANY's glass is specified, this company, upon request, will inspect the installation and without expense report whether the glass furnished is the kind, quality, and thickness specified.

CRYSTAL SHEET

All 39-oz. or $\frac{3}{16}$-in. as well as 45-oz. or $\frac{7}{32}$-in. glass produced by this company is known to the trade and sold as Crystal Sheet.

Advantages—Crystal Sheet Glass possesses a brilliant surface, uniform thickness and is the flattest and whitest window glass produced by any process. Being lower in price than polished plate, it can be used instead of plate for many purposes at a considerable saving.

ARMOR-LITE SAFETY GLASS

For automobiles, airplanes, locomotive cabs, buses, boats, street cars, railway coaches, institutes, industrial buildings, asylums, skylights, display cases, shelving, table tops and dressers.

Armor-Lite Safety Glass is available in thicknesses ranging from .120 to .202 inches.

Armor-Lite Plate and Photo Combination

This affords the same protection and resistance to tests, yet weighs 12 oz. less per sq. ft. than laminated plate and is considerably lower in price. It also permits a lighter frame—a still further saving.

Armor-Lite Bullet-Proof Glass for Bank Protection

Armor-Lite Bullet-Proof Glass provides positive protection against gunfire.

Armor-Lite Bullet-Proof Glass available in thicknesses ranging from .975 to 1.255 inches.

ADAMSTON FLAT GLASS COMPANY

Manufacturers of Flat Drawn Sheet Glass

CLARKSBURG, W. VA.

EASTERN SALES OFFICE, 1 Madison Avenue, NEW YORK, N. Y.
WESTERN SALES OFFICE, 11 So. La Salle Street, CHICAGO, ILL.
JOBBERS IN PRINCIPAL CITIES EAST OF THE MISSISSIPPI

Product

FLAT DRAWN SHEET GLASS, made in any thickness up to ¼ inch.

"A Brand You Can Depend On"

Uses

For all purposes where perfectly flat glass is required. Not only for the lighting of homes and buildings, but for furniture, display cases, etc.

The Company and Its Facilities

The organization, plant and facilities of the ADAMSTON FLAT GLASS COMPANY inspire the confidence and friendship of every customer. Its sales are largely repeat orders from satisfied customers.

The plant is modern in every respect, equipped with two units, having a capacity of over 1,000,000 boxes per year, which insures prompt and dependable service. It has every facility for the most efficient and economical manufacture of a dependable and uniform product.

Adamston Flat Glass

Adamston Flat Glass is vertically drawn in perfectly flat sheets. There is no curvature whatsoever. It is the same on both sides—no right and wrong side to look for when glazing, and glazing is done at much less expense.

The distinct features of Adamston Glass are:

(1) Perfectly flat.
(2) Uniform in thickness and quality.
(3) Natural fire polish of great lustre.
(4) The same on both sides.
(5) Great tensile strength.
(6) Minimum of breakage.
(7) Paper packed to prevent scratching.
(8) Every light of A quality labeled.
(9) Graded according to highest standards.
(10) Sold by representative jobbers in all principal centers.

Grading

Adamston Flat Glass is graded according to the highest standards adopted by flat glass manufacturers of America, and these standards of grading are strictly adhered to.

ADAMSTON FLAT GLASS

All grades	Lights per inch		Av. wt. per sq. ft., oz.	Largest size sheet, in.
	Min.	Max.		
Single	10	11	20	40x50
Double	7½	8½	25	62x84
29 oz.	6½	7¼	29	62x96
34 oz.	5½	6¼	34	62x96
39 oz.	4¾	5¼	39	62x96
¼ in.	3¾	4¼	52	62x96

Service and Distribution

Adamston Flat Glass is generally obtainable from the leading jobbers in the principal cities east of the Mississippi. If the jobber is unable to supply you, write direct to ADAMSTON FLAT GLASS COMPANY, Clarksburg, W. Va.

The company is prepared to furnish any information or offer recommendations to cover any requirements that may be submitted.



Plant at Clarksburg, W. Va.





FLAT GLASS

FLAT DRAWN WINDOW GLAS
POLISHED PLATE GLASS · SAFET
GLASS · FIGURED AND WIRE GLAS

LIBBEY · OWENS · FORD GLASS COMPAN
TOLEDO, OHIO

BLUE RIDGE GLASS CORPORATIO
KINGSPORT, TENN.

BLUE RIDGE GLASS C
KINGSP
TENN
L O F

LIBBEY · OWENS · FORD GLASS COMPANY

The Libbey · Owens · Ford Glass Company is the successor to the Edward Ford Plate Glass Company, the Libbey · Owens · Glass Company, the National Plate Glass Company, and several smaller flat glass manufacturing concerns. The first named company was founded in 1899 by Edward Ford who was the son of Captain J. B. Ford, the first successful manufacturer of Plate Glass in America. The Libbey · Owens Glass Company was organized in 1916 by Edward Drummond Libbey and Michael J. Owens. During his entire business career Mr. Libbey was a dominant figure in the glass manufacturing industry. To Mr. Owens' inventive genius is due many of the improvements in processes of manufacture used throughout the industry today.



The Charleston Plant

● The Libbey · Owens · Ford Glass Company manufactures and distributes a complete line of flat glass. This includes the highest quality Plate Glass for glazing, mirror manufacturing, furniture tops and automobiles —flat drawn Window Glass, heavy Sheet Glass, Greenhouse Glass, Safety Glass and the Figured and Wire Glass manufactured by the Blue Ridge Glass Corporation of Kingsport, Tennessee.

The Libbey · Owens · Ford Glass Company owns and operates eight factories strategically located in Toledo, Ohio, Rossford, Ohio, Lancaster, Ohio, Charleston, W. Va., Ottawa, Ill., and Shreveport, La. Illustrated is the Charleston, West Virginia plant. Leading glass jobbers, conveniently located to serve all building requirements, distribute the output of these plants. Direct factory sales offices are maintained in fourteen cities to serve efficiently the Architectural Profession.

General Offices:
TOLEDO, OHIO

Sales offices are located in:

NEW YORK	KANSAS CITY
BOSTON	DETROIT
ATLANTA	SHREVEPORT
MINNEAPOLIS	BUFFALO
CHICAGO	SAN FRANCISCO
ST. LOUIS	LOS ANGELES
PHILADELPHIA	CINCINNATI

SELECTING THE RIGHT GLASS

The selection of the right glass for various glazing or decorative purposes has become a matter of growing interest and importance to all architects. Windows are indeed the eyes of a building and the glass used may either enhance or detract from beauty of line and detail. Even the general public has become interested through widespread advertising on the subject and *quality* in all types of glass is now an important factor in building construction.

The general recommendations which follow are based on current building practice and will vary according to the design and location of the building, the individual desires of architect and owner and the size of the building appropriation available.

Residences. In the vast majority of private dwellings "A" Quality Labeled Double Strength Window Glass is used. However, at present low prices, many architects are specifying either ¼ or ⅛-inch Polished Plate Glass. Not infrequently Plate Glass is used in living-room and dining-room windows with "A" Quality Labeled Window Glass in other glazing. Picture Windows are finding a great vogue in more expensive residences, especially where the building site affords an attractive view. These large Plate Glass areas are often used in decorative bronze casements with smaller panels at the sides for easy ventilation. Bathroom or dressing room windows may be glazed with a figured glass as described on pages 7 to 10.

Apartment Buildings. "A" Quality Labeled Double Strength Window Glass and Polished Plate Glass are both used. In buildings where high rental rates are to prevail, Polished Plate Glass is more desirable.

Building codes, usually require the use of Wire Glass in openings exposed to the hazard of fire. This type of glass is also recommended for skylights and light wells. Wire Glass is available in both clear and figured glass. See page 7 for details.

In bathroom and areaway windows where obscurity is desired a figured glass is recommended.

Hotels, Office and Bank Buildings. For the past several years Polished Plate Glass has been used almost universally in the larger, more impressive buildings.

If Plate Glass cannot be used throughout it is recommended for the first three floors and "A" Quality Labeled Double Strength Window Glass from the fourth floor up. Even in small hotels the public rooms such as lobbies and dining rooms should be glazed with Plate Glass. As in apartment buildings local building codes make certain requirements where fire hazard is involved. See page 7 for information on fire resisting glass. For corridors, partitions, windows, skylights, elevator doors and other glazing where the vision is to be obscured, see page 7.

School Buildings and Hospitals. "A" Quality Labeled Double Strength Window Glass is generally used but during the present era of low prices an increasing number of architects are specifying Polished Plate Glass. In some schools certain doors and windows, where pupils may be subjected to unusual hazard in the event of breakage, are glazed with Safety Glass or Wire Glass. In a number of recently constructed hospitals, Safety Glass has been used in psychopathic wards.

Department Stores. Polished Plate Glass is universally used for store fronts and is generously used throughout the building. Where the public makes free use of swinging doors, Safety Glass is recommended.

Smaller Stores. Here, also, Polished Plate Glass is universally used for store fronts and is usually used in upper floors for front windows. "A" Quality Labeled Double Strength Window Glass is recommended for other glazing. Occasionally rear or side windows, facing alleys and courts, may be glazed with either Safety Glass or Wire Glass for the protection it affords against breakage by thieves.



SIXTY WALL TOWER, New York City
"A Cities Service Building"
Architects: Clinton & Russell, New York City
General Contractors: James Stewart and Company, Inc., New York City.

LIBBEY·OWENS·FORD

Improved

QUALITY GLASS

L O F

THE LIBBEY · OWENS · FORD flat drawn process, a development and improvement of the Colburn process, revolutionized the manufacture of window glass when it was introduced some fifteen years ago.

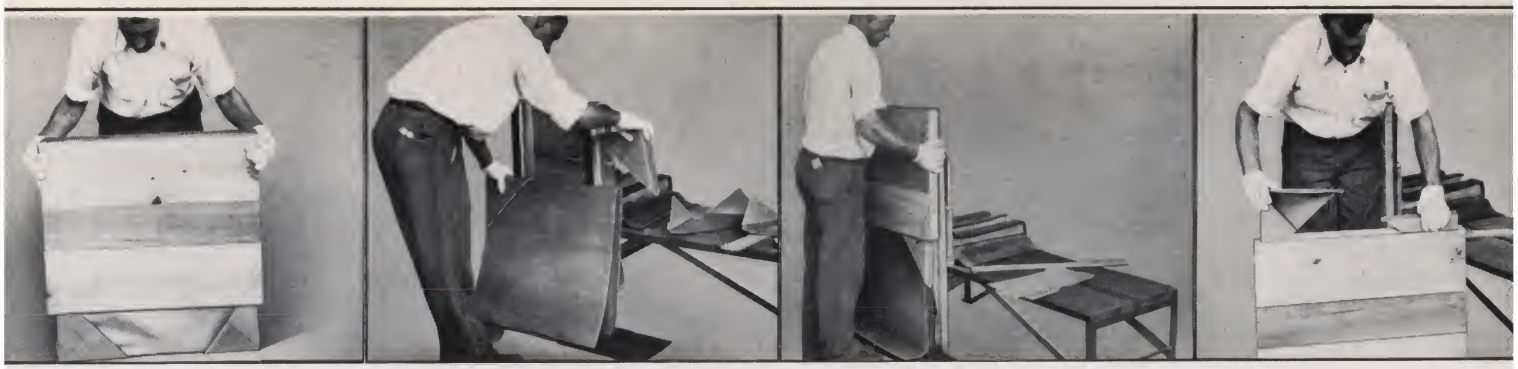
The superior quality of all L · O · F Glass and the extreme importance of the recent developments which are responsible for the new *Improved* Quality glass, are perhaps more readily understood, if its manufacture is considered step by step.

First the scientifically mixed batch of ingredients from which glass is made is poured into a melting furnace or tank. Terrific heat reduces the materials to a molten state. The molten mass then flows into a refining chamber from which it is elevated or drawn a few inches and then passes over a bending roll, still in a semi-molten state. At this point a recently perfected new type flattening process is employed. This development for the first time in the history of the industry produces a glass so free from wave and distortion that it gives a clearer, sharper picture when you look through it, and reduces to a minimum the irregular reflections so noticeable in ordinary window glass.

The smooth, flat ribbon of glass is then thoroughly annealed in ovens or lehrs 5 or 6 times longer than those used by any other manufacturer. This slow annealing makes the glass exceptionally easy to cut and less brittle than other brands. As it comes out of the lehrs, it is *thoroughly cleaned*, permitting even more careful selection and more uniform grading, thus further justifying the preference expressed for Libbey · Owens · Ford Window Glass by architects, builders, jobbers and dealers.



● Here is the surprising result of one of the most exacting tests of window glass that can be made. This unretouched photograph of the Fisher Building, Detroit, was taken *through* L · O · F Improved Quality Window Glass. This glass is so flat and of such exceptionally high quality that, through it, the detail of the many vertical lines is remarkably clear and sharp even to the keenly critical eye of the camera. The photograph in the circle is doubly convincing evidence of the fact that this glass gives a clearer, sharper vision. There is no difference in the way the Tower appears through the glass or above it.



This is the way L·O·F Improved Quality Window Glass comes from the factory. To unpack, remove one end, invert the box, and lift it off the glass... Notice the absence of muss; there is no hay or straw used in this improved method of packing.

To repack a box, stand the glass upright on the floor, with sheets of paper between the lights. A heavy wrapper of waterproof paper is then draped over from the top, and Cushion Corner Caps placed on the two upper corners of the glass as shown.

Now the glass is ready for the box which is next slipped over the top of the glass . . . a simple, easy operation. (For repacking less than a full box, or glass of different sizes, we issue special instruction sheet.) Then the box is inverted, as at the right.

The outside wrapper of water paper is tucked in and the tw maining Cushion Corner Caps p place. Nail on the single board closes the end of the box. The is held in place firmly for re-shi without danger of breakage.

TECHNICAL INFORMATION ON WINDOW GLASS

Libbey · Owens · Ford manufactures Flat Drawn Window Glass in several grades and of varying thickness. Single Strength and Double Strength Window Glass is regularly supplied in two standard grades—"A" Quality and "B" Quality. Both are labeled, as illustrated on this page. All L · O · F Window Glass is manufactured by the exclusive Libbey · Owens · Ford continuous flat drawing process. This results in a lasting brilliance of finish, uniformity of quality and thickness, and a flatness of surface hitherto considered unattainable in window glass.

Flatness. L · O · F Improved Quality Flat Drawn Window Glass is naturally flat. The exclusive process of manufacture draws the glass into a flat sheet directly from the molten state and the new type of flattening process produces a glass that is so free from wave that it gives a clearer, sharper image.

Glazing. Government specifications state that window glass shall be glazed with the convex side out. L · O · F Window Glass can be glazed with either side out because it is truly *flat*—there is no convex side. This saves considerable time in glazing and minimizes breakage, especially since its thorough annealing gives it an exceptional freedom from brittleness.

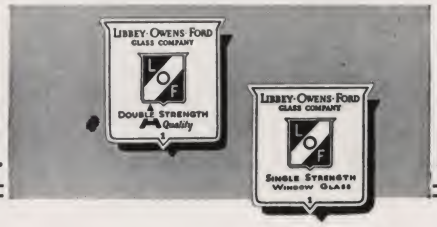
Tolerance in Thickness. Libbey · Owens · Ford Window Glass table of thickness standards is given below:

	Thickness, in.		Lights, per in.		Average weight, oz. per sq. ft.
	Min.	Max.	Min.	Max.	
Single Strength	0.090	0.100	10	11	19.75
Double Strength	.121	.129	7¾	8¼	26.
Picture Glass	0.058	0.067	14.9	17.24	13.

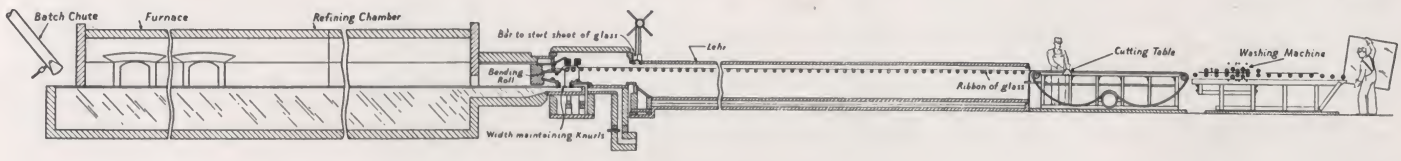
Dimensions. L · O · F Window Glass is cut to dimensions well within the allowable limits of Government Specifications—less than 1/32 of an inch per 1/8 inch thickness.

Packing. The new L · O · F Cushion Corner Cap package, illustrated at the top of this page is the standard packing for the Improved Quality Window Glass. This is the neatest, cleanest and nearest to moisture-proof method of packing so far developed in the glass industry.

Standard Specification. Flat Drawn Sheet Glass—All Flat Drawn Window Glass shall be Libbey · Owens · Ford "A" Quality Double Strength, except as otherwise noted, glass packed in Cushion Corner Cap boxes and each light shall bear the Libbey · Owens · Ford label, indicating strength and quality.



Upper, "A" Quality label. *Lower, "B" Quality label.*



Diagrammatical drawing showing the continuous straight line method of producing Improved Quality Window Glass by the Exclusive Libbey · Owens · Ford process. The long lehr permits slow and thorough annealing in ovens five and six times longer than those used in any other process. This makes L · O · F Window Glass less brittle and easier to cut than other brands, and consequently there is less breakage in glazing.

POLISHED PLATE GLASS »

THE LIBBEY·OWENS·FORD GLASS COMPANY manufactures Plate Glass by two different methods. The Bischeroux process, used in making large sizes, employs pot casting. The pots, molded by hand from the finest quality of clays, are thoroughly dried, aged and cured, and when ready for use are preheated to a proper temperature. They are then filled with the mineral and chemical ingredients from which plate glass is made and are carefully and scientifically heated to an extremely high temperature in gas fired melting furnaces. At the proper time the pot is removed from the furnace and conveyed to the Bischeroux casting machine. The molten batch is poured through rollers onto a moving table, forming the unfinished plate glass blank. The blank then passes from the casting table through a long annealing lehr where under gradually diminishing heat the glass is carefully tempered. Emerging from the lehr, the blanks have a rough surface and are hardly transparent. They are then ready for the grinding and polishing operations. The rough plate is firmly held in plaster on a long line of moving tables. These tables pass under a series of rotating and oscillating grinders using sand as an abrasive until the rough surface is ground down to the point where it is smooth enough to be polished. The moving table passes on under another series of rotating felt polishers where, using rouge as the polishing agent, the glass finally emerges several hours after it has entered the grinding and polishing machine with one side completely ground and polished. After further inspection the plate is mechanically lifted and turned over to start again the long journey back through another grinding and polishing machine which finishes the reverse side. On emerging from this machine the plate is thoroughly washed, and then delivered to the final inspection department. Here it is graded, selected and inspected in accordance with the rigid standards of quality constantly maintained by the Libbey · Owens · Ford Glass Company.

In making of rough blanks for the smaller sizes of plate glass, the continuous flat drawing process, somewhat similar to that employed in making window glass, is used. The grinding and polishing operations are identical with those employed for finishing pot cast plate glass blanks.

Grades. The very finest Polished Plate Glass, which is used almost entirely in making the costliest mirrors, is known as "First Silvering Quality" and owing to the high cost of selecting this quality, it is never specified for building purposes. The next quality is called "Second Silvering" and is often used for high grade glazing work but is seldom specified in sizes over 20 square feet. Most of the plate glass used in glazing is known as "Glazing Quality" and the U. S. Government specifications set up definite requirements for tolerances in thickness and dimensions. The general requirements under the U. S. Government standards for sizes and thickness, are as follows:

Size and Thickness. The standard thicknesses of plate glass shall be 1/8, 3/16, 1/4, 3/8, 1/2, 5/8, 3/4, 1, 1 1/4 and 1 1/2 inches. Sheets are available 1/4 inch thick in sizes having a maximum area of 250 square feet. Glass of 1/4-inch thickness may be furnished having any desired dimension under the maximum of 126x250 inches. The standard stock thickness for glazing purposes is 1/4 inch, but this may vary between 7/32 and 5/16 inch.

Reproduction of an unretouched photograph showing a view through a Picture Window in the residence of Mr. Ernest Ingold, Hillsborough, San Mateo, California. Birge M. Clark, Architect, Palo Alto, California. Wells P. Goodenough, General Contractor.



Tolerances in Thickness. The maximum and minimum thicknesses allowed shall not be more than the given thickness plus or minus one-half the difference between the standard thicknesses, although for 1/4-inch glass occasional plates as thick as 5/16 inch are supplied. The general variation in thickness should not be more than 1/32 inch for individual lights under 10 square feet in thicknesses up to 1/4 inch. The variation in lights over 1/4 inch in thickness should not exceed one-half the total tolerance for that thickness.

Standard Polished Plate Glass Specification. Where polished plate glass is specified, or shown on plans, it shall be manufactured by the Libbey · Owens · Ford Glass Company, and shall be of (—) quality and (—) thickness (insert quality and thickness) in accordance with U. S. Government Standards.

Additional Information. For additional technical data for polished plate glass see catalogue in this edition of the Plate Glass Manufacturers of America.

» » MIRRORS AND PANELS



In the Bolet residence in Los Angeles, (an exterior view of which appears on the inside back cover of this catalogue) an unusual mirror is made a feature of the room illustrated at the left. Douglas Honnold, Hollywood, is the architect and J. S. Abel, Los Angeles, the general contractor.

●

Grinding and Polishing Machine at the Rossford Plant of the Libbey · Owens · Ford Glass Company.

●



THE constantly broadening use of silvered plate glass is especially noticeable in recent designs for theatres, retail stores and other construction of public or semi-public buildings. In *the best of the fine residences* recently constructed, full-length mirrored doors in bedrooms and bathrooms are very much in evidence and in many homes mirrored bathroom walls are becoming popular. After being conspicuously absent for more than a generation the mirror over the mantel is often seen. Some of the best designers among furniture manufacturers have been quick to grasp this trend by increasing the use of large size mirrors in their creations.

Libbey · Owens · Ford Polished Plate Glass for mirrors is noted for its brilliant polish and its freedom from imperfections. The careful inspection and accurate grading described on the preceding pages even exceeds the requirements of Government Standards.

Government Specifications. For the guidance of the architect and owner and for the protection of the mirror manufacturer, the following standards of quality have been approved by the Mirror Manufacturer Association of America and adopted by the U. S. Bureau of Standards:

AA Quality. AA quality mirrors shall be entirely free from major defects and as nearly perfect as it is possible to manufacture them. Only well distributed, fine seed, and small faint hair lines when not grouped shall be permitted.

A Quality. The central area of mirrors of this quality shall be free from major defects, but may contain well-scattered seed and short faint hair lines, when not grouped, and occasionally very light short finish visible only on close inspection. The outer area, in addition to the foregoing, may contain seed and short faint scratches when not grouped.

No. 1 Quality. The central area of mirrors of this quality may contain scattered seed, faint hair lines, and light short finish. The outer area in addition to the foregoing may contain short scratches and occasional strings not over 2 inches long.

No. 2 Quality. Mirrors of this quality may contain the following defects: Numerous scattered seed, occasional coarse seed, light reams, strings, light scratches, short finish if not torn, hair lines if not too densely grouped, and bull's eye if not visible from front inspection.

No. 3 Quality. Mirrors of this quality may contain all the defects which may be found in plate glass.

Thickness. Plate glass mirrors of commercial standard qualities shall be between $\frac{3}{16}$ and $\frac{5}{16}$ of an inch thick. If specific thicknesses are ordered a variation of $\frac{1}{32}$ inch plus or minus the given thickness shall be allowed.

Silvering. All commercial standard quality mirrors shall be silvered in an approved manner and guaranteed for a period of one year from the date of manufacture unless the mirrors are subjected to unusual conditions, such as open weather, moist walls, steamed rooms, direct sunlight, or similar conditions.

SAFETY GLASS



SINCE it was first used during the World War laminated non-shatterable glass, now generally known as Safety Glass, has been progressively improved until it is now used in a variety of ways. Practically all automobile, bus and taxicab manufacturers furnish it as standard or optional equipment in their products. It is widely used by the aircraft industry, by motor boat and yacht builders, and many railway coach builders are experimenting with its use.

Its application to building construction is of more recent origin, but it can be furnished both in the form of Safety Sheet Glass and Safety Plate Glass. Architects are specifying it for revolving and swinging doors, in window ventilators, and in similar installations where the public is subjected to unusual hazard in the event of glass breakage. In several recent hospital jobs, Safety Glass has been used in the psychopathic wards and in the corridors adjoining those wards.

Libbey · Owens · Ford Safety Glass is made by an exclusive process whereby two sheets of thin glass are bonded under heat and great pressure to a center sheet of transparent plastic. In use, these glass sheets may of course crack or break, but the cracked parts adhere so strongly to the plastic that the danger from scattering or flying pieces of glass is thereby reduced to a minimum. In order to protect the bond between the glass and plastic the edges of all Libbey · Owens · Ford Safety Glass are sealed with an exclusive weatherproof compound. This prevents moisture seeping in between the two pieces of glass and causing a separation between the glass and the plastic.



The residence of Mrs. Geo. B. Robbins at Burlingame, Calif., is adjacent to a golf course. Architect Wm. Wilson Wurster solved a perplexing problem with L · O · F Safety Plate Glass in the center lights and Safety Sheet Glass in the sides.



"Lefty" Gomez of the New York Yankees, threw a baseball at this L · O · F Safety Glass Windshield with all the steam of his powerful arm behind it. It actually BOUNCED BACK, leaving nothing but that cobweb of fine lines to show where it struck.

LIBBEY · OWENS · FORD SAFETY GLASS

BLUE RIDGE FIGURED AND WIRE GLASS

MANUFACTURED BY BLUE RIDGE GLASS CORPORATION · KINGSPORT, TENN

SOLD BY LIBBEY · OWENS · FORD GLASS CO., TOLEDO, OHIO THROUGH LEADING GLASS JOBBERS

Blue Ridge Glass. Rolled Figured and Wire Glass, Polished Figured and Wire Glass, for Partitions, Doors, Transoms, Windows and Skylights.

Where to Obtain Blue Ridge Glass. Leading Glass Jobbers and Glazing Contractors carry Blue Ridge Glass in stock or can get quick shipment of any pattern, size and thickness from the factory's large supplies.

Blue Ridge Figured and Wire Glass is Specified by Architects Because of Its

1. Uniform quality and thickness.
2. Brilliant, sparkling appearance.
3. Attractive and efficient patterns.
4. Easily cleaned designs.
5. Light transmitting and diffusing effectiveness.
6. Wire Glass Fire Retarding Properties (approved by Underwriters' Laboratories Inc. as Number R-2129).

Suggestions to Architects. State width (horizontal measurement) first and height (vertical measurement) second, when writing the size of any kind of glass.

Wire glass is usually set with the wire running vertically, hence the first dimension given is understood to be across the wire twists (width) unless specifically shown otherwise.

Ribbed glass is generally glazed with the ribs running vertically (parallel to height).

Prism glass distributes light best when prisms are set horizontally (parallel to width).

Specify kind of glass by name and give thickness and finish (see table of patterns, thicknesses, sizes and weights).

Stipulate Blue Ridge Glass Corporation as the manufacturer and insist that Blue Ridge Glass be furnished.

PATTERNS, THICKNESSES, SIZES AND WEIGHTS

Thickness, in.	Patterns	Max. width, in.	Max. length, in.	Approximate weight per sq. ft., lbs.
Rolled Figured Glass				
1/8	Industrex, Luminex, Velvex, Hammered, Ribbed, Diffusex, Pebblex, Florex, Mazex	60	132	2
3/16	Industrex, Luminex, Velvex, Hammered, Ribbed, Diffusex, Pebblex, Florex, Mazex	60	132	2½
7/32	Muralex, Transex, Prism	60	144	3¾
¼	Industrex, Luminex, Velvex, Hammered, Ribbed, Diffusex, Pebblex, Florex, Mazex	60	144	4
Wire Glass				
¼	Industrex, Luminex, Velvex, Hammered, Ribbed, Diffusex, Pebblex, Florex, Mazex, Muralex	60	144	4
⅜	Rough	60	144	5½
¼	Polished	60	144	4
Polished Figured Glass				
7/32	Diffusex, Industrex, Pebblex	60	144	3¾

Standard Specification, Obscure and Wire Glass. Where rough or polished wire or obscure glass is specified herein, or shown on plans, it shall be (....) inch in thickness and shall be (....) pattern (specify thickness and pattern desired), and shall be manufactured by the Blue Ridge Glass Corporation.



Polished Wire Glass. (Wire Mesh Shown Actual Size). Used in all openings where clear vision and the security of non-scatterable fire retardant glass are desired. Genuine polished plate glass with wire reinforcement. Blue Ridge's outstanding quality product.

A NEW SURFACE TREATMENT FOR FIGURED GLASS

ONE SURFACE SATINOL BLUE RIDGE GLASS CORP

TWO SURFACES SATINOL BLUE RIDGE GLASS CORP

Satinol is a brand new development of our laboratories. It fulfills the need of Architects and Illuminating Engineers for glass of softer texture, greater beauty and better illuminating qualities.

The mellow, satin-like finish of *Satinol* does not finger mark or spot when handled or touched. Its evenly distributed illumination is soft and restful to the eye and it absorbs glare with practically no loss of light transmitted.

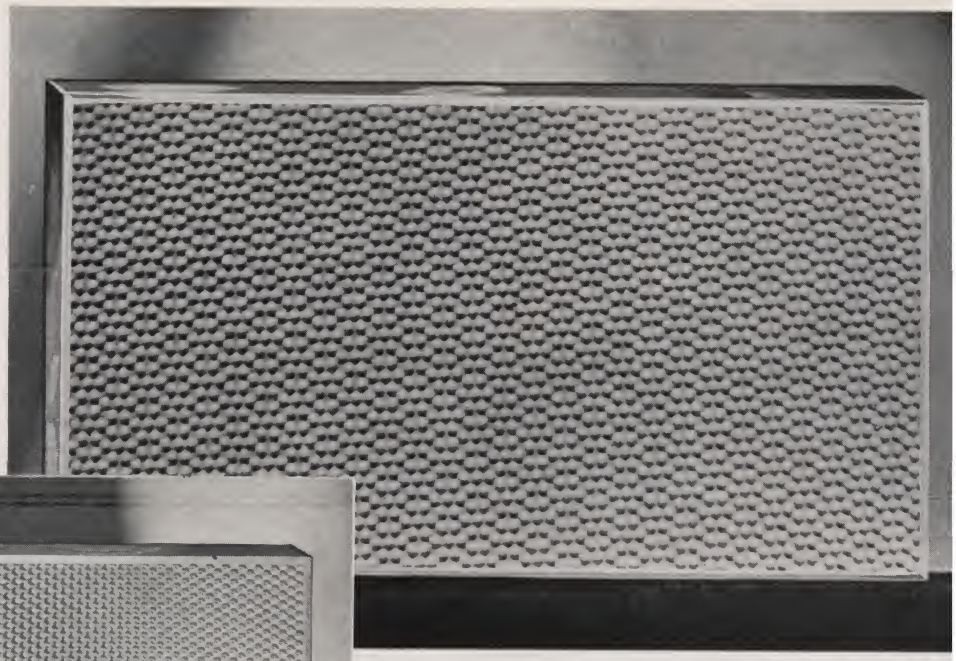
Satinol treatment is available, on either one surface or both, at a moderate extra cost on nine patterns—*Industrex*, *Luminex*, *Velvex*, *Hammered*, *Ribbed*, *Diffusex*, *Pebblex*, *Florex* and *Mazex*. Choice of glass and degree of treatment can thus be made to achieve correct architectural objective and proper illumination.

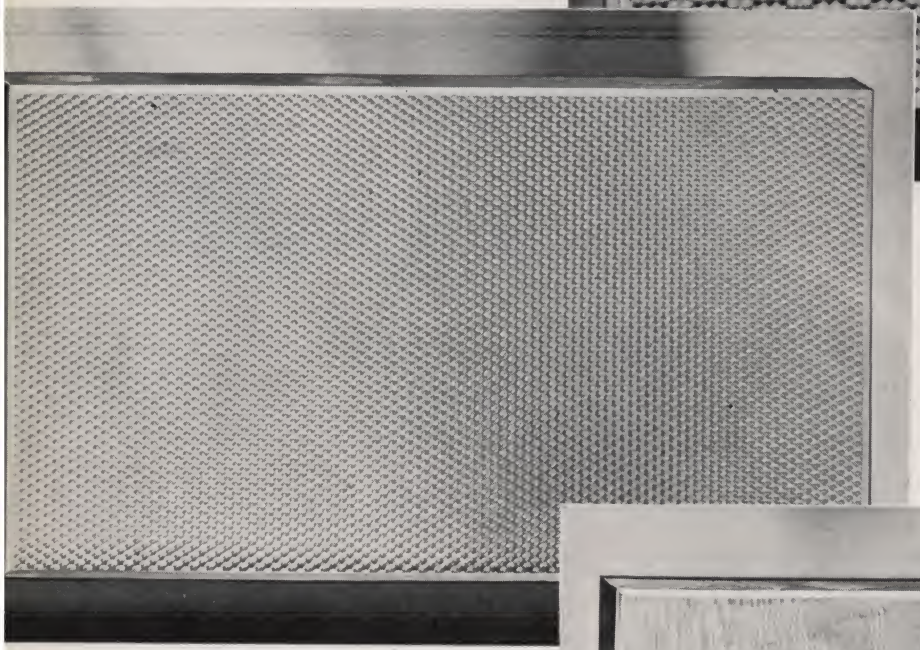
Standard Satinol Specification. "Where obscure glass is specified herein or shown on plans, it shall be (....) inch in thickness and shall be (....) pattern *Satinol* (one surface or two surfaces), and each light shall bear the *Satinol* label of the Blue Ridge Glass Corporation." (Always specify the thickness, name of pattern and whether one or two *Satinol* surfaces are desired).

Diffusex Glass →

(Pattern Shown Actual Size)

Primarily for interior partitions, doors and transoms, but equally effective in any location where an adequate volume of softly diffused light is desired. An attractive grouping of small and very slightly elevated lenses spaced far enough apart to avoid dirt collecting pockets and to permit easy cleaning with a moist cloth.





← Industrex Glass

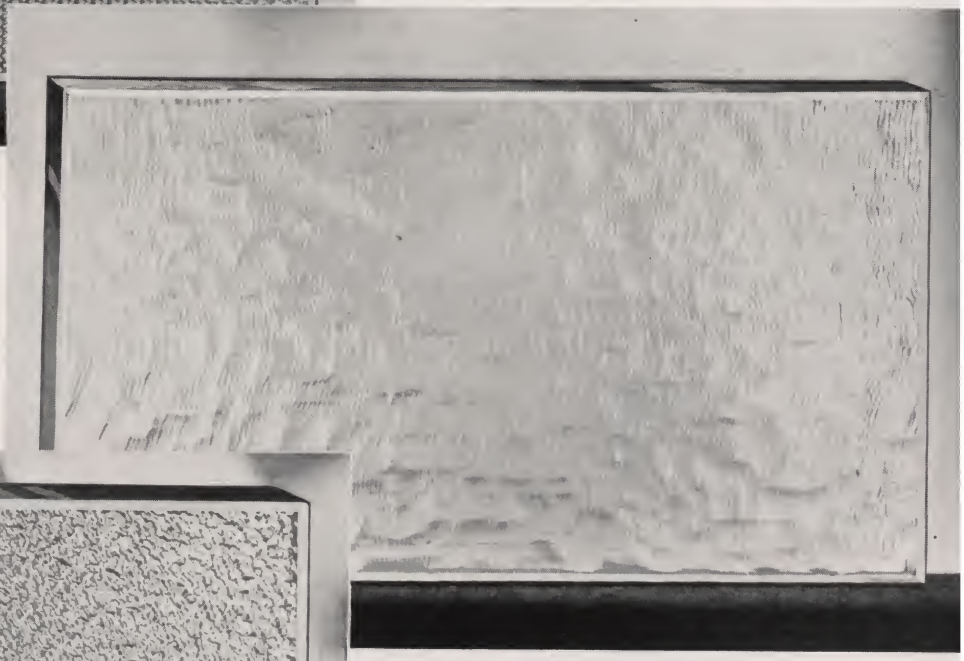
(Pattern Shown Actual Size)

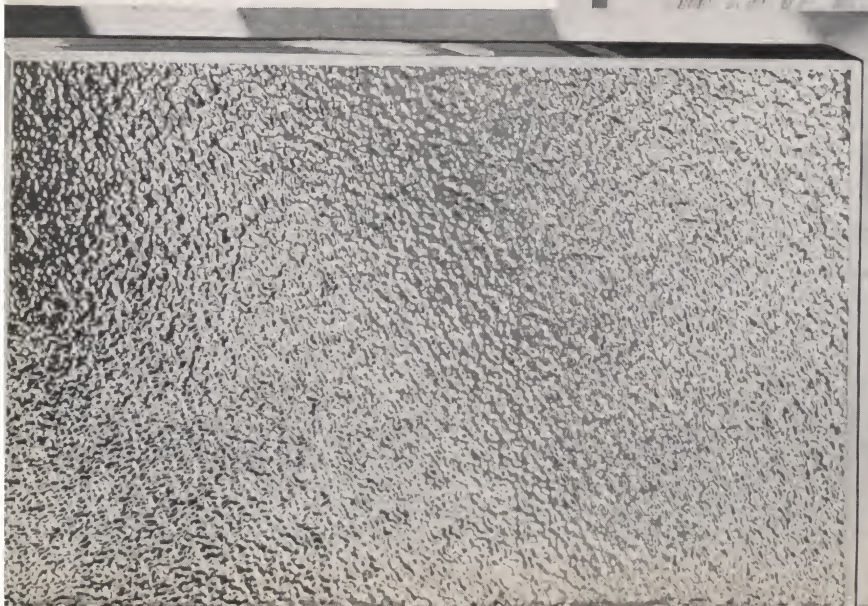
For industrial and commercial buildings—exterior and interior openings. A compact arrangement of lens shaped figures combining effective distribution of light and attractive appearance without the disadvantage of deeply cut grooved lines. Not a "dirt collector." Industrex can be easily cleaned with a moist cloth.

Luminex Glass →

(Pattern Shown Actual Size)

Especially recommended for industrial buildings where the cost of keeping glass clean is an important factor. Provides a medium distribution of light and is a relatively transparent pattern of extremely fine texture that can be glazed and cleaned like clear glass.

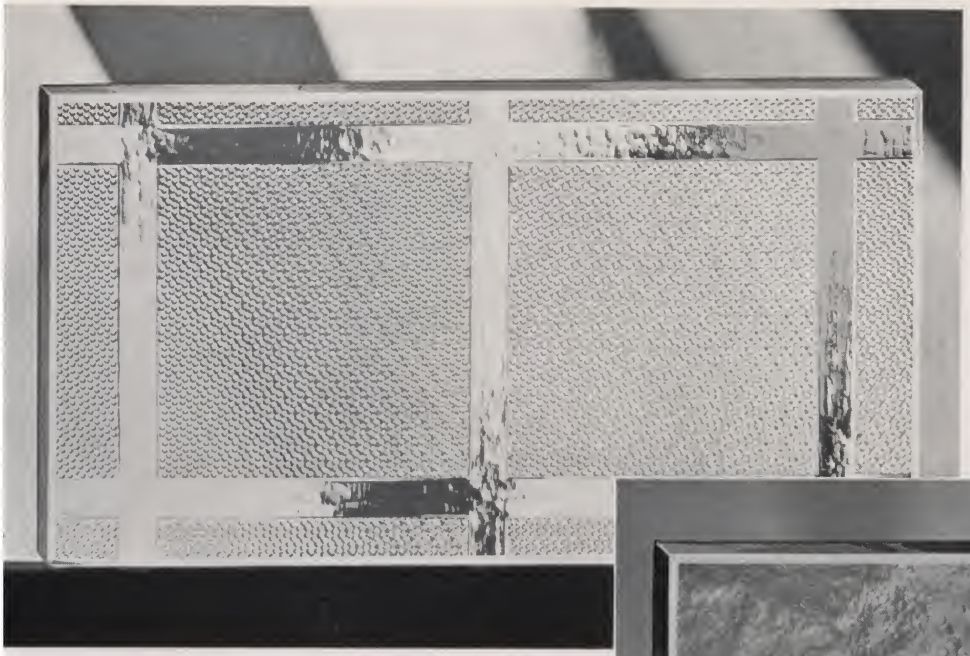




← Muralex Glass

(Pattern Shown Actual Size)

A new glass for partitions, doors and transoms. Its modest dignified beauty harmonizes with any style of architecture and its mechanical efficiency insures its popularity. The pattern is finely engraved to reduce dirt collections and to afford easy cleaning. Available both plain and wired. (See table of sizes, thicknesses, etc.)



← Transex Glass

Pattern Shown ½ Size (Squares 3¼x3¼ in., division lines ⅜ in. wide)

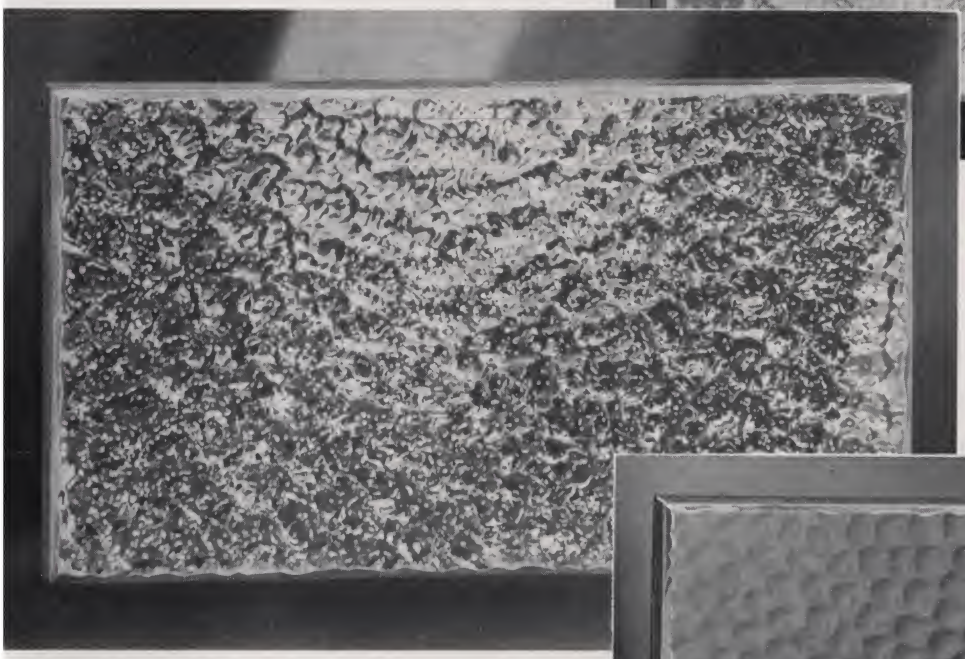
For store front transoms. A solid sheet of glass made to resemble separate panes set in metal bars. No cemented joints to weaken under the stress of wind and rain storms. The background pattern (Diffusex) and the smooth division lines are uniformly and but slightly elevated without pits, grooves or sharp angles in either. Transex will remain clean and distribute light efficiently even under unfavorable conditions long after dirt collections have destroyed the effectiveness of ordinary tiled or prism transoms.



Velvex Glass →

(Pattern Shown Actual Size)

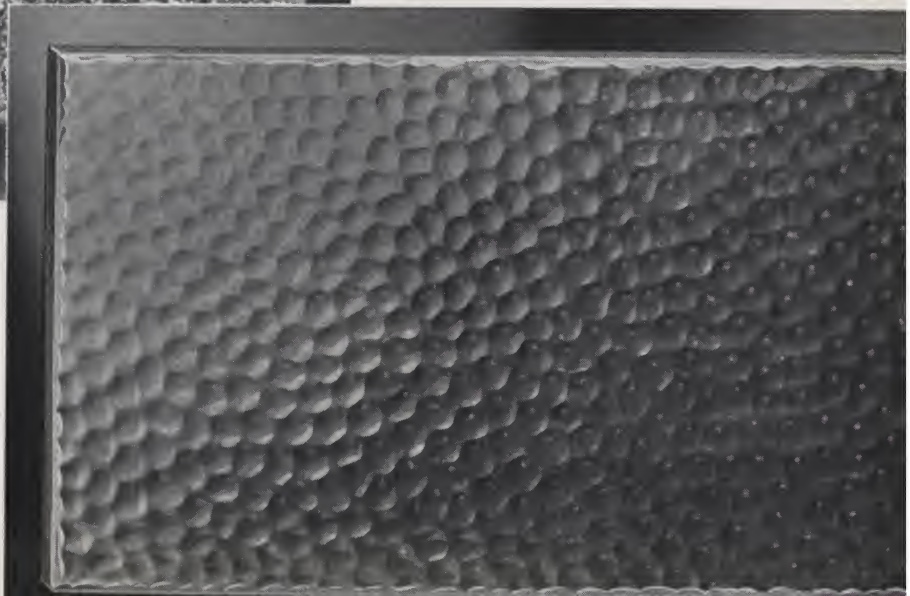
A highly practical glass for skylights, factory walls and monitors but also suitable for office partitions, doors and transoms. This unique pattern is extremely shallow, yet it creates the illusion of depth when light rays pass through the glass. An exceptionally clean glass—not totally obscure but sufficiently so for ordinary commercial and industrial building conditions.



← Pebblex Glass

(Pattern Shown Actual Size)

An unusually brilliant and obscure glass for office building interiors; diffuses light splendidly and affords privacy within the room. Pebblex is more deeply imprinted than some of the newer Blue Ridge patterns such as Diffusex and Muralex. Its attractive appearance has led many architects to specify it.



Hammered Glass →

(Pattern Shown Actual Size)

For general industrial glazing—exterior and interior. The contiguous lenses forming the pattern distribute the light passing through the glass and accentuate the brilliance of the metal. A clean glass with beauty and mechanical efficiency.



Florex Glass

(Pattern Shown Actual Size)

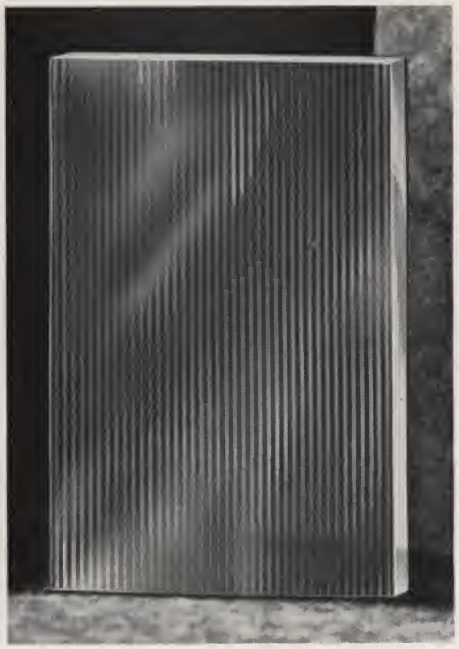
Long a favorite for interior glazing. A brilliant and attractive pattern.



Mazex Glass

(Pattern Shown Actual Size)

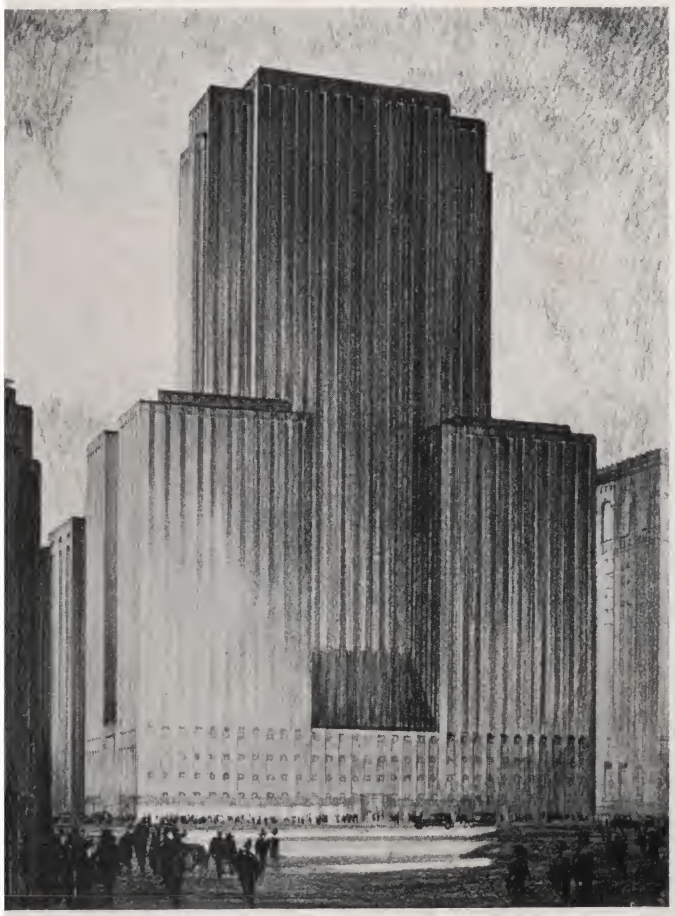
Another design for building interiors. Highly obscure, it distributes light remarkably well.



Ribbed Glass

(Pattern Shown Actual Size)

Used only for industrial glazing. Diffuses light when clean but has a tendency to collect dirt more rapidly than our newer patterns.



Above—The Field Building, Chicago's newest office building where Blue Ridge Muralex is used in all inner partitions. The Polished Wire Glass used in this structure is also Blue Ridge. Architects, Graham, Anderson, Probst & White. Contractor, Geo. A. Fuller Co.

BLUE RIDGE GLASS IS USED EXTENSIVELY IN THESE TWO FINE EXAMPLES OF MODERN ARCHITECTURAL DESIGN

● An interesting use has been made of Blue Ridge Velvex Satinol (one surface) in decorative wall panels in the foyer of the new Roxy Theatre, Metropolitan Square, New York, shown below. It is also used in all north windows. The architects were Reinhard and Hofmeister; Corbett, Harrison and McMurray; Raymond Hood and Fouilhoux. Contractors, Todd & Brown, Inc.





1 *Beaux Arts A*
New York C
tects — Rayn
and Kenneth
chison.

2 *Residence*
Kiser, Atlant
chitects — He
and Shutze
Contractor
Hoi

3 *Harborview Hospital, Seattle, Washington. Architects—Thomas Granger & Thomas, Arcade Building. General Contractors—Western Construction Co., Seaboard Bldg.*

4 *A Westchester County home built by the Westchester Holding Corporation. Architects—L. S. Beardsley and O. A. de Bogdon.*

5 *Residence of Rossiter L. Mikel, Piedmont, California. Architect—Birge M. Clark. General Contractor—F. C. Stolte.*

6 *Maryland Grade School, Clayton, Missouri. Architect —W. B. Ittner, Inc. General Contractor — Kellerman Construction Company.*

7 *Residence of Mrs. Elizabeth Noble Bolet, Los Angeles, California. Architect—Douglas Honnold. General Contractor—J. S. Abel.*

8 *The Meany Hotel, Seattle, Washington. Architect —R. C. Reamer. General Contractor— Teufel & Carlson.*



THE brilliant polish and sparkling, lasting beauty of its windows emphasize the charm which won for this fine home the current award of the Architectural League Show for Domestic Architecture . . . It is the residence of Mrs. J. J. Goodrun, Atlanta, Georgia. Architects: Hentz, Adler and Shutze. Contractors: Collins, Holbrook and Collins. Glazed with Libbey·Owens·Ford Quality Glass.

Libbey·Owens·Ford Glass Company, Toledo, Ohio, Manufacturers of Highest Quality Flat Drawn Window Glass, Polished Plate Glass and Safety Glass; also distributors of Figured and Wire Glass manufactured by the Blue Ridge Glass Corporation of Kingsport, Tenn.

LIBBEY·OWENS·FORD
QUALITY GLASS

SCOHY SHEET GLASS COMPANY

Manufacturers of Vertically Drawn Sheet Glass

SISTERSVILLE, WEST VIRGINIA

The Product and Its Uses

SCOHY SHEET GLASS, Single Strength, Double Strength, Triple Strength—all qualities made by the Vertically Drawn, Improved Sheet Process. A positively flat glass made in all the weights, sizes and grades needed for every type of building. A sheet glass that meets the most exacting requirements of architects, home builders and contractors for such uses as homes, offices buildings, hotels, libraries, industrial plants, greenhouses, display cases, steamships and governmental projects.

We also manufacture bulb edge specialties, shelving, display partitions, etc., photo glass, automobile glass and glass used in the production of safety glass.

More Than a Third of a Century's Experience in the Manufacture of Window Glass

Under the management of Mr. John B. Scohy, who has been connected with the industry as a producer for more than a third of a century, producing in that time enough glass for some three million homes; this company at the present time is shipping glass that will glaze more than 125,000 homes a year.

The fact that the organization is under a recognized leader in the industry, and that the product is made with the greatest care under department heads having over a quarter century of *individual* experience in the making and handling of window (flat) glass, merits the most careful consideration of the architect in making up his specification.

Manufacturing and Shipping Facilities

The plant at Sistersville, West Virginia, comprises three acres devoted exclusively to the manufacture of window (flat) glass, and has a capacity of over 750,000 boxes per year.

Our modern and improved manufacturing facilities, and traffic bureau connections guarantee delivery within the time specified.

Features of Scohy's Window Glass

Positively Flat Surfaces—All Scohy Sheet Glass is vertically drawn. This assures a positively flat surface and brilliant lustre or sheen, as no rolls actually touch the sheet in process of manufacture until the glass has actually hardened.

Can Be Glazed Either Side—The result of drawing glass vertically in sheets is a revelation in visibility. Scohy Window Glass can be glazed either side because both surfaces have the same flatness and a brilliant fire polish.

Graded According to Highest Standards—Every light of Scohy Window Glass is graded to the highest standards recognized in the industry (these are higher than those set by the U. S. Government) by specialists who are experienced and skilled. Each box is branded with the name of the inspector who has verified the quality and workmanship of the cutter. This is assurance that the architect or contractor will get exactly what is specified.

Paper Packing Prevents Scratches—SCOHY SHEET GLASS COMPANY are the pioneers in paper packing of Window Glass. Each light or pane is packed with paper. This prevents the danger of scratches and also minimizes breakage.

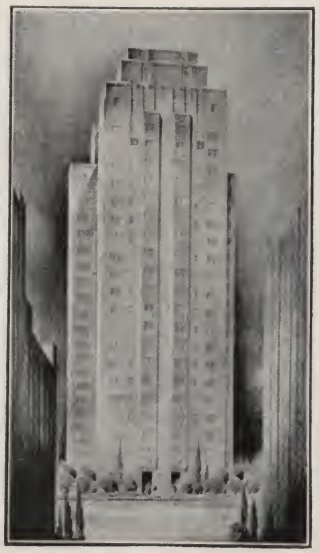
Labels Placed on Each Glass—AA and A quality glass carries our distinguishing label on each light of glass. This protective feature assures the architect of the quality he specified.

Suggested Specification

All Window Glass, except as noted otherwise, shall be Scohy's *("AA") ("A") quality, (single) (double) strength.* All glass shall be paper packed and each light shall bear the Scohy label indicating the strength and quality of each light. These labels shall not be removed without authority of the architect or his representative.



5000 Cornell, Chicago, Ill.
CONLEY AND CARLSON, Architects



Narragansett Apartments, Chicago, Ill.
LEICHENKO AND ESSER, Architects

INDESTRUCTO GLASS CORPORATION

Manufacturers of Bulletproof and Scatterproof Glass Since 1919

FARMINGDALE, LONG ISLAND, N. Y.

FACTORY TELEPHONE, Farmingdale 716

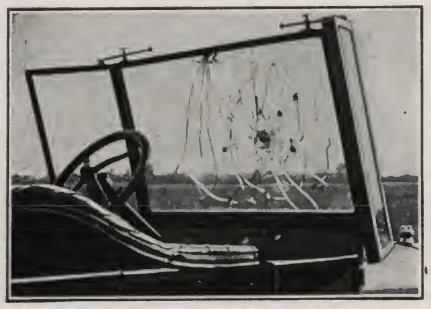
NEW YORK OFFICE: 160 Varick Street, Telephone WAlker 5-3964

Indestructo Bullet Resistant Glass

Designed to provide great strength and resistance to penetration, especially of bullets from firearms. It is a clear vision, laminated product, made of alternate layers of plate glass and a flexible, transparent binding material, firmly united in one solid sheet under a patented process, which not only provides bullet resistance *but also insures against separation, discoloration or reduced transparency.*

The degree of resistance of laminated glass is in direct ratio to the strength of the bond uniting the glass with the transparent, flexible material. The Indestructo bond is accomplished without gelatins or other adhesives which frequently dry out or suffer natural chemical reaction causing loosening of the bond, total separation or objectionable yellow discoloration, rendering the glass unfit for the uses primarily intended.

Revolver Resistant Glass—This standard material can not be penetrated by any revolver, regardless of caliber or ammunition. The windshield in the accompanying photograph withstood 11 shots from a .38 caliber long barrel police special revolver in a small area and a final shot from a .45 automatic in the center of the already weakened area. There was no penetration, no displacement of glass from the back and no dangerous mass action.



Indestructo Glass in Windshield
Twelve shots without penetration

Special Bulletproof Glass—Glass, which will resist penetration from any weapon, may be produced by varying the combination of thicknesses and number of layers. Data on heavy side arm and shot gun resistant glass is given in table below. In most cases the standard revolver resistant material provides adequate protection at minimum cost.

Indestructo Scatterproof Glass

Developed primarily for protection against injury from flying glass in windows of buildings or vehicles. It is made in two grades, plate quality and sheet quality.

This type of glass is being used more and more in many ways for buildings and construction work. It has been found valuable in entrance doors, both swinging and revolving, and in overhead lighting fixtures in restaurants and other public places.

Sizes

There are limitations in the maximum size of any one sheet that can be produced.

Continual improvements in process and equipment are always increasing the maximum size. It is suggested that we be consulted for information as to sizes when a job is being laid out.

THICKNESS AND WEIGHTS OF INDESTRUCTO GLASS

Description	Thickness, in.	Tolerance, in.	Wt., lb. per sq. ft.		Number glass layers
			Net	Crated	
Bullet Resistant:					
Revolver	1	1/16	11	15 to 16	3
Heavy side arms	1 1/8 to 1 1/4	1/16	13	18	3
Shot gun	1 1/8 to 1 3/8	3/32	14 to 16	17 to 20	4
Scatterproof:					
Grade A	5/16 to 5/8	.....	3 to 6	4 to 8	2
Grade B	1/8 to 1/4	.....	2 to 4	3 to 6	2



Bronze Speak Fixtures and Sunken Deal Trays

Installation and Fixtures

Indestructo bullet resistant glass requires no special methods of setting or framework, other than that the frame should be large and strong enough to receive and carry the heavier and thicker glass. Aside from this, standard practices in setting glass apply.

There are various types of fixtures for passing of money and for communication between teller and customer, any of which are well adapted for use with this glass. One type has bronze speak fixtures and sunken deal trays while another has sunken deal tray with an offset wicket giving a space of 1 in. around the glass for passage of the voice thus eliminating the use of speak fixtures.

Without proper equipment Indestructo glass can not be cut to size after manufacture, so it is necessary that exact sizes be furnished with orders if shapes are rectangular or circular. If irregular shapes are required templates or patterns should be furnished. This glass can be drilled, ground, polished and otherwise worked the same as ordinary glass, but this work must be done by the manufacturer. It also can be etched, chipped or sandblasted to produce ornamental surface patterns.

Indestructo Marble

Recently developed and now offered for sale, is a line of true reproductions of any type of marble in scatterproof glass. This is accomplished by an exclusive photographic process which reproduces in exact color and detail any marble desired. Indestructo marble has many advantages over real marble. The surface has an enduring polish, it is not porous, panels are easily replaced and matched, it is easier to set, weighs less, is stronger and is considerably cheaper. It is made by the same process of manufacture as Indestructo scatterproof glass and consequently has, in addition, all of the advantages of that material.

Nine standard marbles are available in this material as follows: Verde Antique, Curley Verde Antique, Black and Gold No. 1, Black and Gold No. 2, Brecce Rose, Jeune Fleuri, Skyros, Red Levanto, and Sarrancolin de Pyrenees. Any other type can be reproduced, even marbles that have been out of quarry for years.

This material finds application in any building work where real marble would be used. Among some of its applications are interior walls in buildings, barber shop and soda bar fixtures, store fronts and tops for furniture.

Guarantee

Indestructo glass is furnished under a guarantee against deterioration unfitting it for use due to faulty manufacture.

It is also guaranteed for inside glazing against let-goes and edge separations for a period of fifteen (15) months from date of manufacture; provided, however, that if either glass is cracked at time of inspection, this guarantee will not apply.

PROTEX GLASS CO.

220 Fifth Avenue
NEW YORK, N. Y.

POLISHED PROTEX IS A SAFETY GLASS

Reinforced by Special Alloy Wires Spaced Two Inches Apart Running Parallel in One Direction



Mooring Mast of the Empire State Building, New York, N. Y.

A Prominent Protex Glass Installation

The mooring mast of the Empire State Building is glazed with Protex Glass to protect the public from any possible chance of injury from falling broken glass.

The fan lights over the entrance doors to the Empire State Building are Protex Glass—an architectural feature carrying out the graceful lines of the building and protecting the public from possible injury should one of these decorative lights of glass by chance be broken.

Protex Glass is not designed as a fire retardant, but as a safety glass, through which visibility is permanent.

Protex Glass will not shatter and fall out when securely installed.

Made in about ¼-inch thickness, in sizes up to 56 inches wide and 140 inches long. The wires run with the long dimension and should be shown that way on the drawings.

Polished Protex weighs approximately 4 lbs. per square foot.



Fan Light Over Entrance Doors to the Empire State Building, New York, N. Y.
Shreve, Lamb & Harmon, Architects
Starrett Bros. & Ekin, Inc., Contractors

HENDERSON BROS.

Designers and Craftsmen in Leaded and Stained Glass in the Antique and Modern Styles

TELEPHONE
VAnderbilt 3-4638

693 Third Avenue
NEW YORK, N. Y.

HENDERSON'S ANTIQUE LEADING

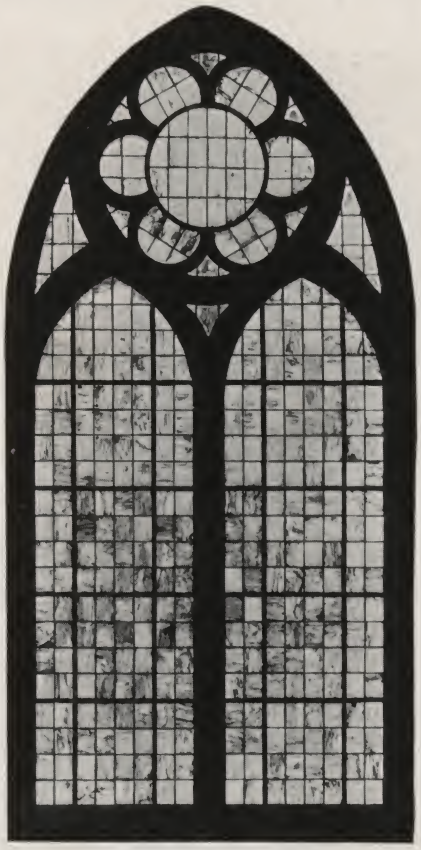
Adaptable to Early English and Tudor leaded glass. Henderson's Antique Leading is made to resemble the old hand wrought lead which was used during the best periods of old leaded glass. It gives a touch of distinction and individuality to leaded glass that is both charming and characteristic of the best in old glass.

The cames are of widths varying from ⅛ to 1 in., with or without center reinforcing.

Special designs of Period or modern glass executed for the architect.



Antique Leaded Medallion



Tudor Cathedral Glass Used in Cathedral of St. John the Divine, New York, N. Y.





Antique Stain Glass Medallions



Slight Antique



Full Antique

PLAIN

Henderson's Antique Leading

Slight Antique and Full Antique Leads are furnished in widths of ⅛, 3/16, ¼, 5/16, ½, 5/8, ¾ and 1 in.

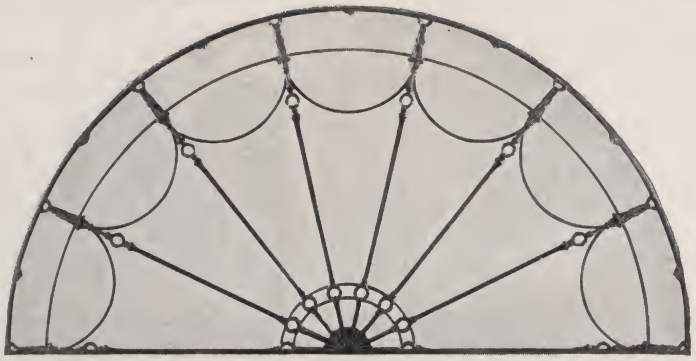
Henderson's Antique Leading has a modulated antique effect without a heavy cast appearance. The pronounced irregularity is obtained by our patented process

REINFORCED

HENDERSON'S GEORGIAN PERIOD LEADING

The attention of the architects and builders is called to our "Easy Fix" Metallic Leading which makes possible the type of leading used during the Georgian Period, long since abandoned, but still to be seen in old doorways, ceilings, lights, etc.

By using modern materials, methods and our continuous clip (see drawings) which runs parallel and continuous with the glass and holds both glass and putty securely in place, a leaded sash having the exact appearance of the old work can be economically furnished.

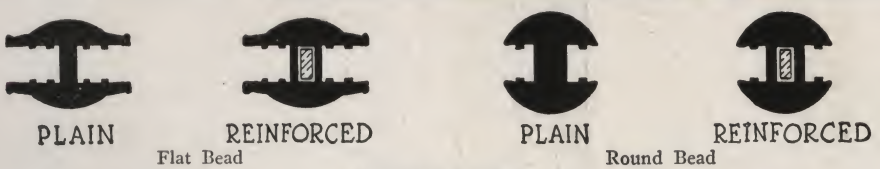




The clip can be readily turned up to allow of inexpensive repairing by an ordinary mechanic and left in its original condition, making a substantial and weathertight job.

"Easy Fix" Metallic Leading can be constructed of brass, copper, zinc or sheet metal and lead coated.

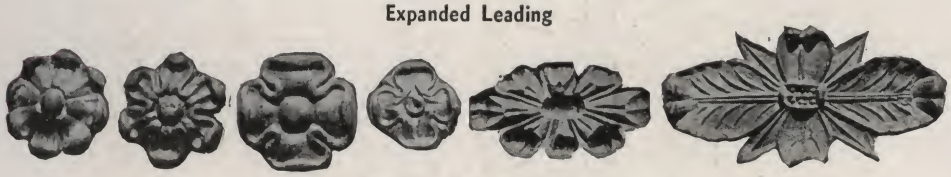
Lead ornaments of which we have a large assortment can be readily applied to Henderson's "Easy Fix" Metallic Leading.



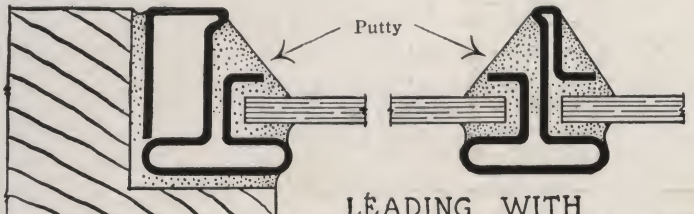
Expanded Leading

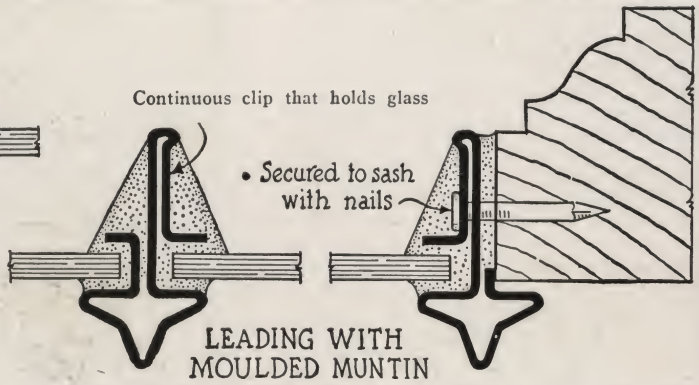


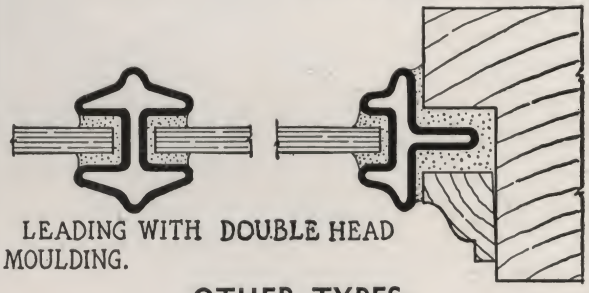
Special Leaded Mitre Joint

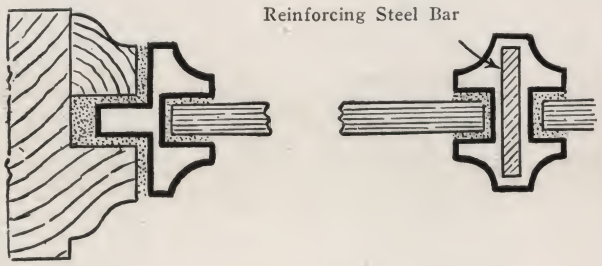


Examples of Ornaments









METALLIC LEADING AND METHOD OF INSTALLATION

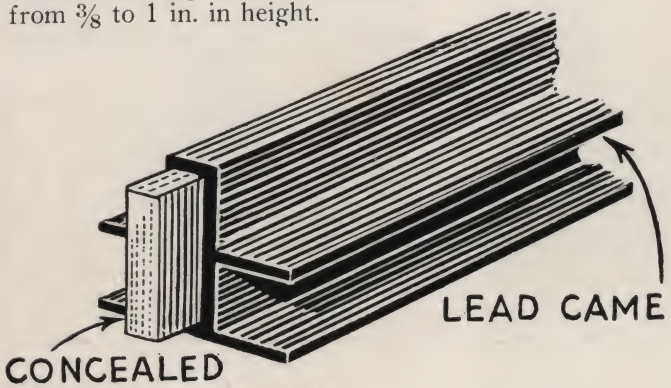
HENDERSON'S REINFORCED STEEL STAY BAR CAME AND REINFORCED JOINT CONSTRUCTION

Added Strength without Extra Cost

The Henderson Reinforced Steel Stay Bar Came represents a forward step in the reinforcement of leaded glass windows. Unusual strength is provided *without extra cost* and without losing the characteristic leaded glass effect.

In the Henderson method, the steel reinforcing bar is thoroughly embedded in the lead pocket where it is protected against rust and becomes an *integral* part of the leaded glass panel. This sturdy method of construction is clearly shown below. The prevailing practice has been to suspend the glass from the stay bar by means of wire and solder. In this type of construction, the glass eventually develops a tendency to sag and bulge with resultant leakage. This tendency is entirely eliminated in the new Henderson Reinforced Steel Stay Bar Came which is particularly suited for ceiling lights, operating windows and double glazing for outer protection work in churches, etc., and wherever panes are over 144 sq. ins. It is also particularly valuable where the leaded glass is subjected to considerable jarring.

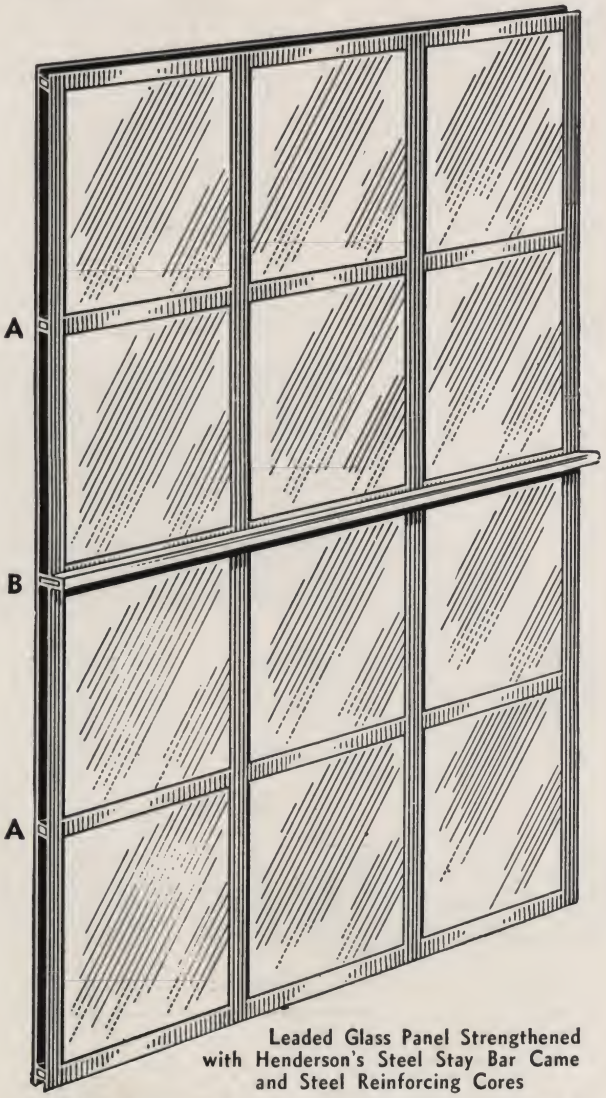
Henderson lead cames are from 3/8 to 1 in. wide, and are made with a pocket to receive a steel reinforcing rod 1/8 in. thick and from 3/8 to 1 in. in height.



(U. S. Pat. 1,858,775)

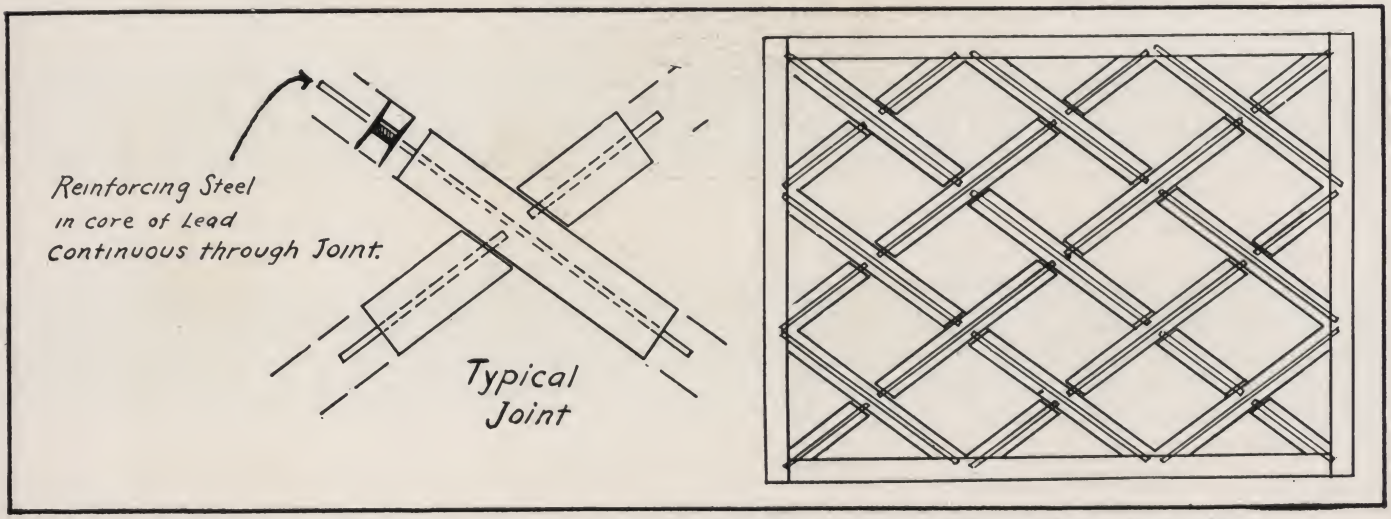
Henderson's Reinforced Steel Stay Bar Came

The steel stay bar is embedded in the heart of the lead where it is protected against rust and becomes an *integral* part of the leaded glass panel



Leaded Glass Panel Strengthened with Henderson's Steel Stay Bar Came and Steel Reinforcing Cores

A. Regular reinforced steel core lead used on Henderson's leaded glass.
B. Stay bar came lead used in certain places to provide additional reinforcement



Henderson's Reinforced Joint Construction (with Steel Core Reinforcing) Used on All Diamond Pattern Leaded Glass

The interlapping of reinforcement steels is clearly shown

HENDERSON'S LEADED GLASS

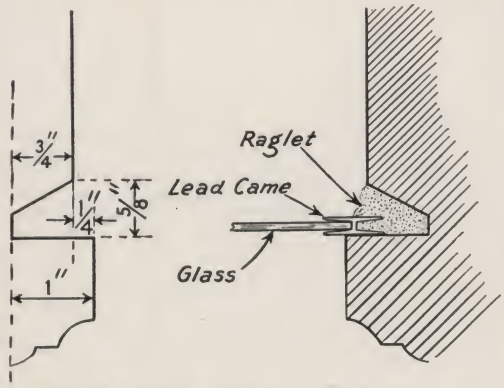
Manufacturing Facilities

Henderson's Leaded Glass is carefully made and fabricated by modern methods.

We have efficient hydraulic presses for drawing the leads and can economically produce the special glazing sizes and forms used in the Tudor, Spanish, Colonial and Georgian period designs.

Adequate manufacturing facilities, combined with quantity purchases of raw materials, enable us to produce quality work at minimum prices. Skilled workmanship with careful supervision from first to last, insure a finished product of uniformly highest quality and enable us to guarantee Henderson's Leaded Glass against leakage and warpage.

Leaded glass, carefully and systematically made of substantial materials, as is Henderson's Leaded Glass, will last indefinitely.



Method of Forming Raglet for Leaded Glass Where Glass Is Set Directly Into Stone

Construction Features

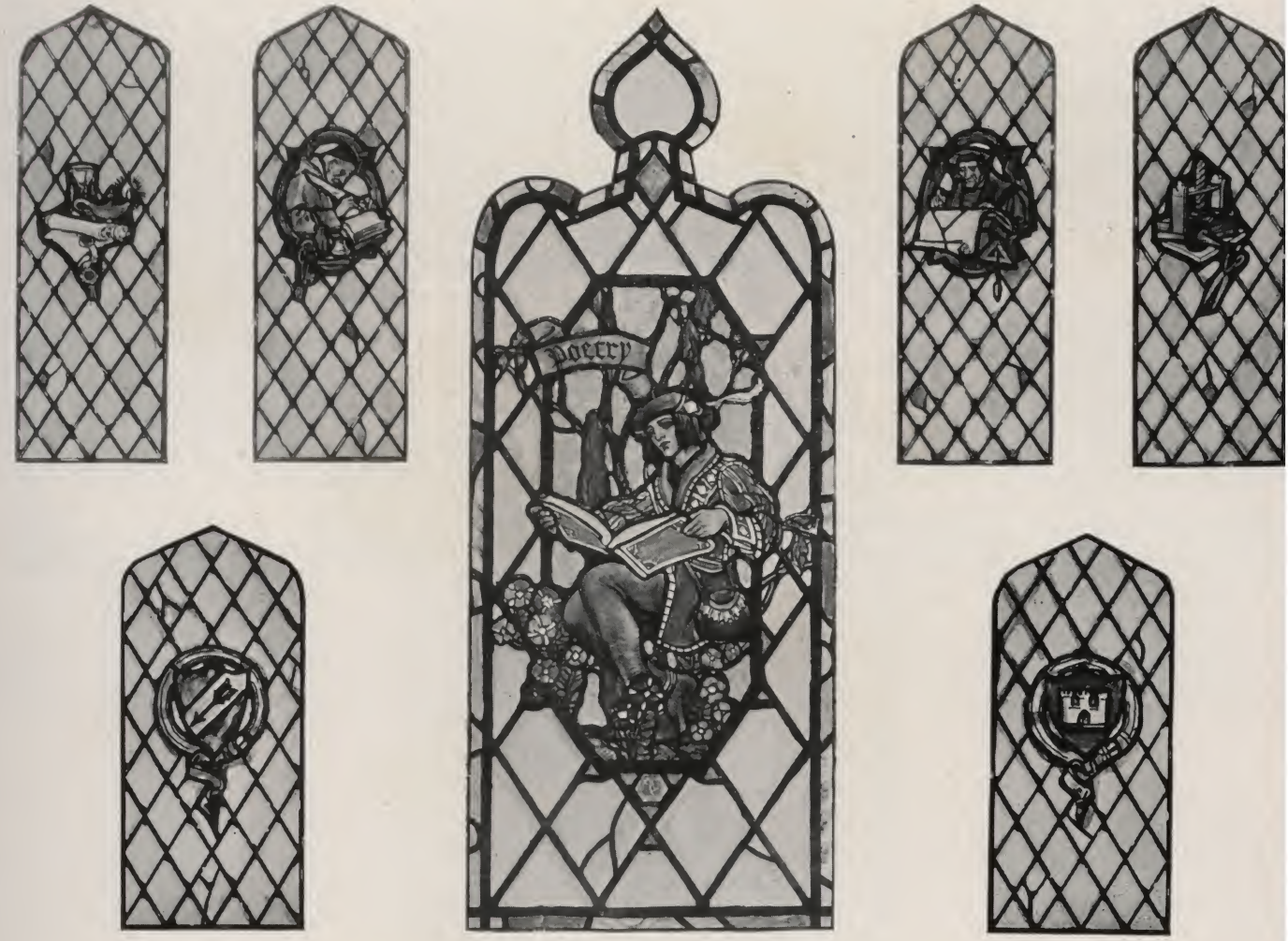
Lead Cames—Heavy in thickness. Leaf of the lead is ¼ in. thick; heart, ⅜ in. thick. Only pure virgin lead is used in our cames. We do not recommend cames less than ⅝ in in width.

Reinforcing—All leads running the narrow dimension are reinforced with steel bars embedded in the heart of the lead. For panels, in which the narrowest dimension is more than 18 ins., we advise the use of Henderson's Reinforced Steel Stay Bar Came (described on the preceding page) at intervals not to exceed 24 ins.

Glass—Double Strength, Grade "A" glass.

Soldered Joints—Soldered joints are heavy and solder is uniformly applied over the entire joint extending beyond the corners.

Cementing Compound—The compound is applied between the lead and the glass on both sides of the glass. A special mastic compound is used and applied in a careful and uniform manner. After completion, the leaded glass is kept in our shop for two weeks in order that the cement shall be thoroughly dry before shipping.



THE J. AND R. LAMB STUDIOS

Designers and Craftsmen for More Than Seventy-five Years

TELEPHONE
CHelsea 2-4445-46

323-327 Sixth Avenue, NEW YORK, N. Y.

Products

STAINED GLASS WINDOWS.
VENETIAN and BYZANTINE MOSAICS.
GOTHIC and CARVED WOODWORK and FURNITURE.
INTERIOR DECORATION—Ecclesiastical and special rooms.
MARBLE, STONE and GRANITE Reredoses, Altars, Baptismal Fonts, Pulpits, Wall Tablets, etc.
METAL WORK including Tablets, Altar Lights, Crosses, Candelabra, etc. of bronze, brass and wrought iron.
LIGHTING FIXTURES of ecclesiastical or special character.

The Company

The House of Lamb, by reason of its age and continuity of ownership and direction, closely parallels the Medieval Guilds. Founded over 75 years ago, the Lamb Studios have developed an authenticity and excellence of design and craftsmanship, the result of three generations of specialistic study and extensive experience both here and abroad. Complete craftsmen in the largest sense in their relation to both art and architecture, the Lamb Studios, besides designing for the church, also handles work for public and semi-public buildings and homes—from the largest decorative problem to the smallest item of design.

STAINED GLASS AND MOSAIC



Stained Glass

Stained Glass

Many of the acknowledged outstanding commissions executed in this country are the works of the Lamb Studios. They have specialized in all "schools" of glass, particularly in the English and the 12th and 13th Century Antique, now again, so much appreciated.

The Lamb Studios use only the finest grades of glass, carefully selected for color, while our designing force and the craftsmen selecting, cutting, painting and glazing the window, have had many years of specialistic training and experience.

Mosaic

The first to use the real Venetian and Byzantine Mosaic in an outstanding way, in this country, the Lamb Studios have a large number of most important examples of this ancient craft to their credit. Only the true Venetial smalte is used in the formation of the mosaic, cut, fitted and set in the authentic manner. We are equipped to originate and execute designs in close co-operation with the architect or building committee.

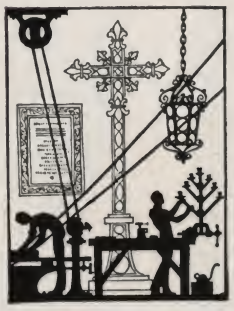


Mosaic

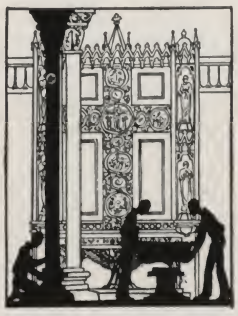
OTHER DEPARTMENTS OF THE LAMB STUDIOS



Woodwork
Expert cabinet makers and skilled wood-carvers to execute in walnut, oak, mahogany, etc., original designs to the minutest detail with special attention to hand carving



Metal Work
Brass, bronze, wrought iron, silver and gold fashioned into crosses, lighting fixtures, vases, etc. Specialists in memorial tablets of engraved bronze



Marble, Stone, Granite
We are equipped to execute and erect whole interiors of churches and chapels. Memorials of all forms from a mausoleum, with its elaborate interior, to the simplest memorial cross



Mural Painting
Artists competent to work in oil, tempera, jesso or gold leaf. Murals suitable in subject, arrangement and color for a simple wall panel or the whole end of a church



Interior Decoration
Our staff can execute a whole scheme of decoration or re-decoration assuring a unified treatment of painting and finishing of ceilings, beams, walls and floors

A FEW OUTSTANDING COMMISSIONS

Important examples of our work will be found in the following buildings:

Cathedral of St. John the Divine, New York, N. Y.
St. Andrews Cathedral, Honolulu, Hawaii
St. Johns Cathedral, Denver, Colo.
Cathedral of Fond du Lac, Fond du Lac, Wis.
Newark Museum, Newark, N. J.
Brooklyn Museum, Brooklyn, N. Y.
Leland Stanford University Chapel, Palo Alto, Cal.
Forest Lawn Cemetery Chapel, Omaha, Neb.
Tuskegee Institute Chapel, Tuskegee, Ala.
Cornell University Chapel, Ithaca, N. Y.
Columbia University, Kent Hall, New York, N. Y.
Georgia School of Technology, Atlanta, Ga.
Drew University, Madison, N. J.
Gov. Flower Memorial Library, Watertown, N. Y.
Lakewood Cemetery Chapel, Minneapolis, Minn.
The Clark Mausoleum, Los Angeles, Cal.
St. Edward the Martyr, New York, N. Y.
Calvary Episcopal Church, New York
St. Georges Chapel, New York, N. Y.
Holy Trinity Lutheran Church, New York, N. Y.
Plymouth Church, Brooklyn, N. Y.
St. Pauls Episcopal Church, Richmond, Va.
7th Presbyterian Church, Cincinnati, Ohio
Church of the Ascension, Pittsburgh, Pa.
Hughes High School, Cincinnati, Ohio

We will be glad to supervise the installation, in any location, of important work entrusted to us.

ESTABLISHED 1889

RICHARD N. SPIERS & SONS

Leaded and Stained Glass

TELEPHONE
TOmpkins Square 6-5040

Spiers Studio Building, 50 West 15th Street
NEW YORK, N. Y.

Products

CHURCH and MAUSOLEUM WINDOWS.
LEADED GLASS for Homes and Institutions.
ANTIQUE MEDALLIONS.
HAND WROUGHT LEADWORK.
HARD METAL SETTINGS.
CAST LEAD ORNAMENTS.
INTERIOR STEEL CASEMENTS.
CHURCH WINDOW FRAMES.

Experience and Service

Special designs submitted to architects; samples of glass, metal and window setting details sent on request. Forty-three years making windows for every use.



Hand Wrought Lead Door Panel

Hand Wrought Leadwork

Illustrated above is a door panel executed in our finely modelled, hand wrought leadwork. This can be used to replace doors of plate glass with iron grilles.

Special ornaments can be made for appliqué to glass or any other material.

Suggested Specifications

General—All leaded glass shall be executed to conform with patterns shown on drawings or special design submitted and approved by architect.

(The width of lead, plain, irregular or antique and the type of glass, imported or domestic antique, cathedral or opalescent should be specified.)



Designed and Executed for St. Mary's Episcopal Church
Height, 7 ft. 0 in.; width, 4 ft. 0 in. overall



Example of Modern Treatment in Stained Glass, Designed and Executed by Us for Private Dining Room
Width, 5 ft. 0 in.

Suggested Specifications (Continued)

Leading shall be soldered thoroughly on both sides and all flanges filled with a cement containing 50% pure white lead putty, 30% whiting, 10% litharge and 10% red lead mixed with pure linseed oil so as to make glass perfectly watertight.

Reinforcing and Setting—For setting in wood sash, use pure white lead putty for bedding and beading after sash has been primed.

Reinforcing to be formed of galvanized steel bars inside the leads or soldered to face of lead as determined by the width and design of the lights. The maximum width for inside reinforcement to be 24 in.

For setting in steel sash, use an approved steel sash putty. Reinforcing as noted above to apply here also.

(Sash should be furnished with mouldings for most substantial construction.)

Where glass is set in stone reglet, it shall be bedded thoroughly in white lead putty after shellacing stone, and a margin of lead must show evenly around edge of opening. It shall be reinforced by means of galvanized iron bars sunk deeply into the stone groove and tied to glass with a sufficient number of copper wires.

Leave glass clean and whole on completion.



Heraldic Medallions and Crests Reproduced

Metal Work Department

Along with stained and leaded glass, we manufacture interior steel casement windows and special steel frames for church windows. Write for prints showing our bronze and aluminum friction-pivot church ventilators, guaranteed perfectly air- and water-tight.

BRASCO MANUFACTURING COMPANY

Patented Metal Store Fronts

HARVEY, ILLINOIS

(Chicago Suburb)

DISTRIBUTION AND COMPLETE STOCKS THROUGHOUT UNITED STATES AND CANADA

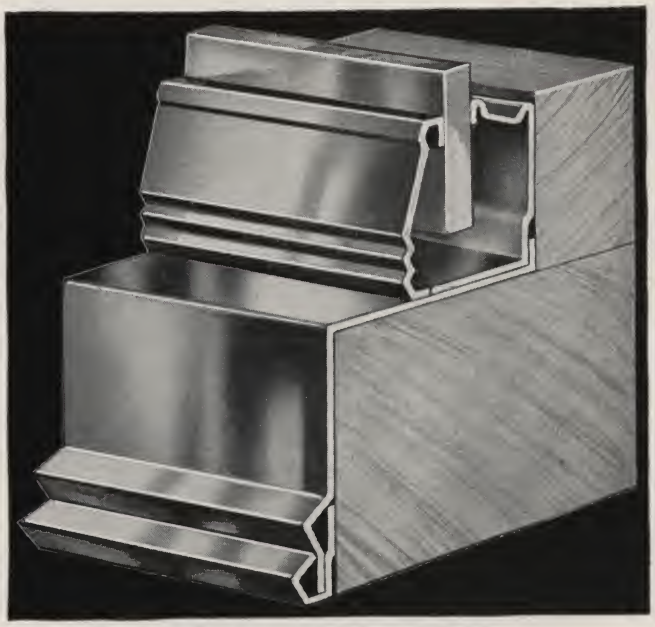
Products

BRASCO PATENTED COMPLETE METAL STORE FRONTS in Bronze, Permawite (aluminum alloy), Monel Metal, Copper, Extruded Bronze, Extruded Aluminum and Extruded Nickel Silver.

Also Cold Rolled Mouldings in all metals, including stainless steel, rustless iron, monel metal, special alloys of all descriptions, nickel silver, copper, brass, bronze, aluminum and special steels; Solid Metal Store Front Ventilators and Showcase Doors; Thresholds, Kick Plates and Door Guards; Metal Covered Wood Mouldings.

Time Tested Principles

All Brasco systems embody the essential elements to insure safety and permanence in the setting of plate glass. They combine simplicity and practicability with modern architectural beauty and feature throughout the principle of *indirect screw pressure,* maximum daylighting, extra wide grip on the glass and special provision for full absorption of movement and vibration in the plate.

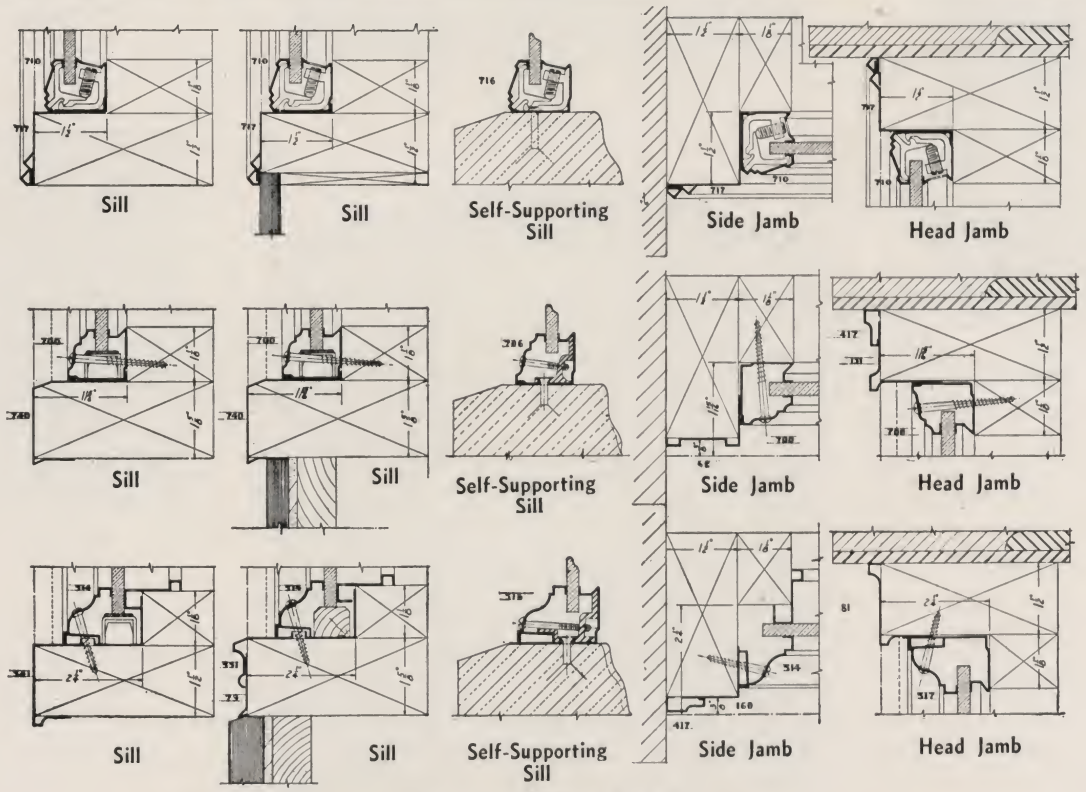


Brasco No. 710 Shadow Line Sash

This ultra-modern sash is shown here in conjunction with sill cover No. 717. Note the deep contrasting lines. No screw heads to mar the brilliant appearance. *(Patent applied for.)*

Samples and Details

Details on these pages show only a few of the typical Brasco sections. The line embodies sash of various designs, is unusually complete throughout and offered in seven modern metals. Write for complete details of hollow metal construction as well as of extruded bronze, extruded aluminum or extruded nickel silver. Actual full sized samples will be furnished gladly upon request.



One-quarter Size Details

Brasco Store Fronts may be obtained in Monel Metal, Bronze, Copper, Permawite, Extruded Bronze, Extruded Aluminum and Extruded Nickel Silver

Sectional Details

The illustrations on this and the preceding page show typical sections.

Write for complete, full size details.

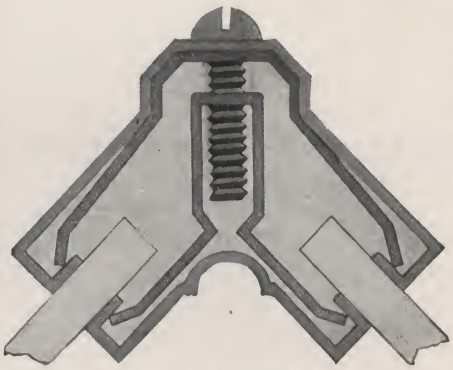


No. 6 Corner Bar

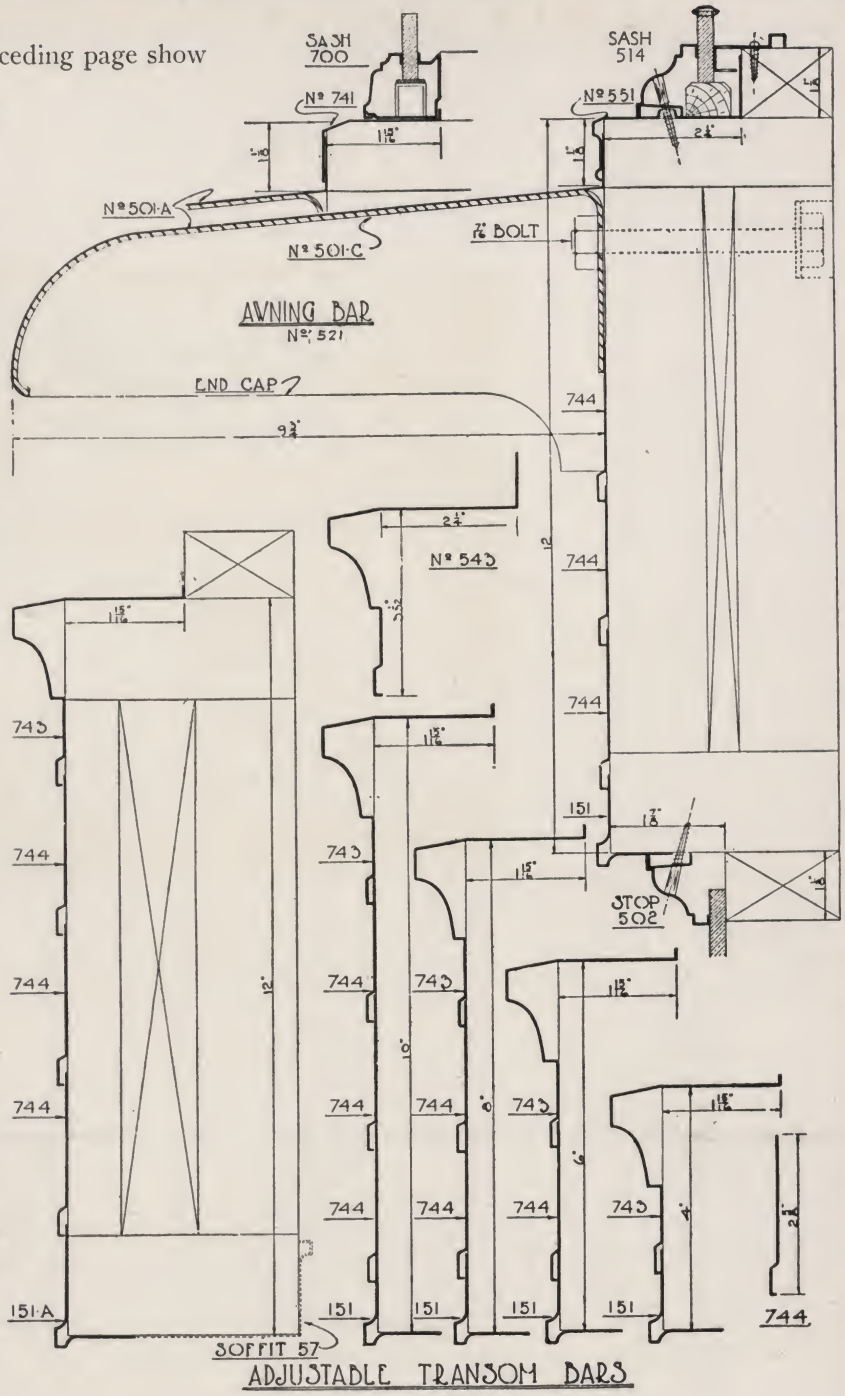
Continuous Reinforcement

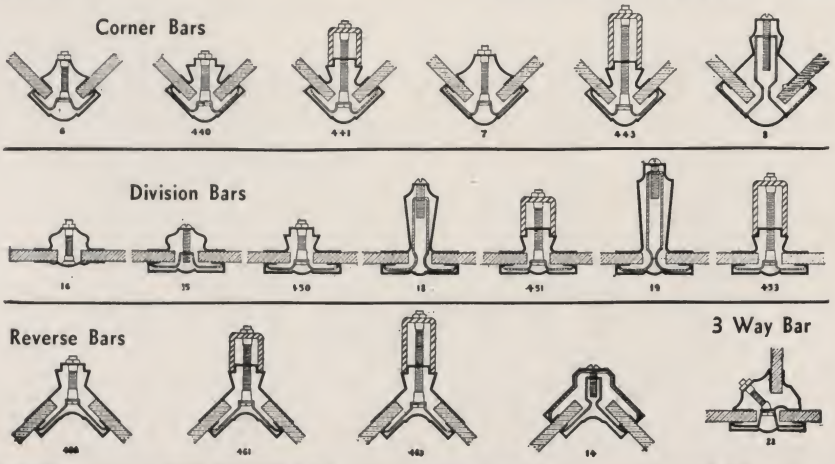
The halftones in this column as well as the details below illustrate the continuous steel reinforcement which has always been a feature of all *Brasco* bars.

The indirect screw pressure principle of holding glass is employed throughout these bars regardless of size or angle.



No. 14 Reverse Bar





These Bar Details Approximately One-quarter Size

DETROIT SHOW CASE CO.

Makers of Metal Store Front Construction

OFFICE AND FACTORY
1670 West Fort Street
DETROIT, MICH.

NEW YORK OFFICE, 344-346 East 32nd Street
PHILADELPHIA OFFICE, 316 Commonwealth Building
PACIFIC COAST OFFICE, 450 Skinner Building, SEATTLE, WASH.
DISTRIBUTERS AND DEALERS IN ALL PRINCIPAL CITIES

Desco METAL STORE FRONTS

Products

Desco Metal Store Front Construction.

Also manufacturers of Hollow Metal Show Case Doors, Hollow Metal Mouldings, Extruded Bronze Thresholds, Kickplates, Push Bars, Metal Mirror Frames, Sign Frames, Hollow Metal and Kalamein Mouldings in copper, brass, bronze, german silver and aluminum alloy.

Description

Desco Metal Store Front Construction has been designed to meet the requirements of the most critical architects. The several shapes and members of the construction harmonize along most approved modernistic architectural lines. Heavy gauge cold rolled nonferrous metals only are used in its manufacture. Architects will find Desco complete in every detail, containing everything necessary for the simplest or most elaborate store front job.

Finishes

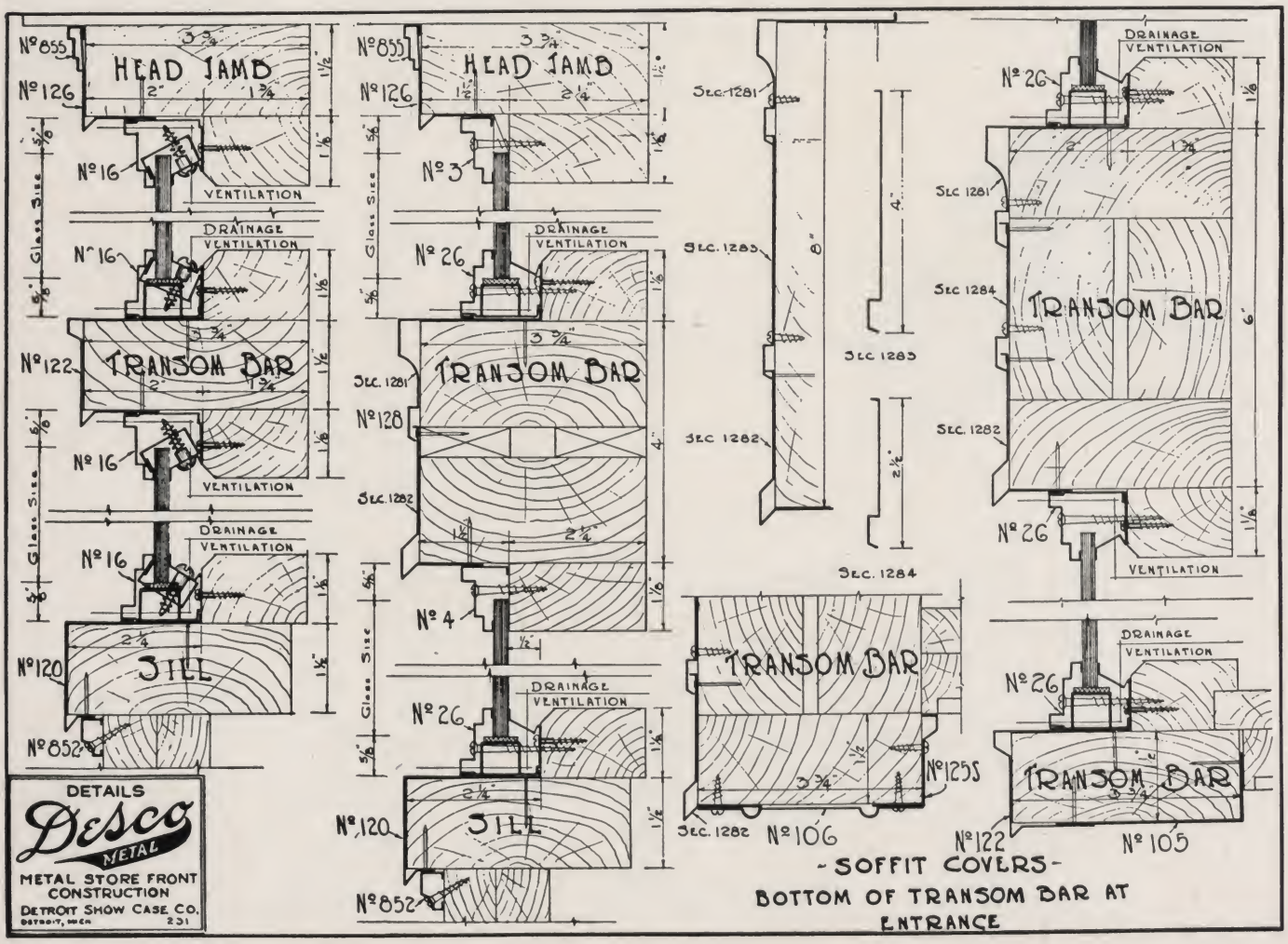
Desco can be furnished in solid bronze, in solid copper or the new white metal known as aluminum alloy in plain finish, satin finish, polished finish or any of the special finishes such as statuary bronze, gunmetal, oxidized, or according to architect's sample.

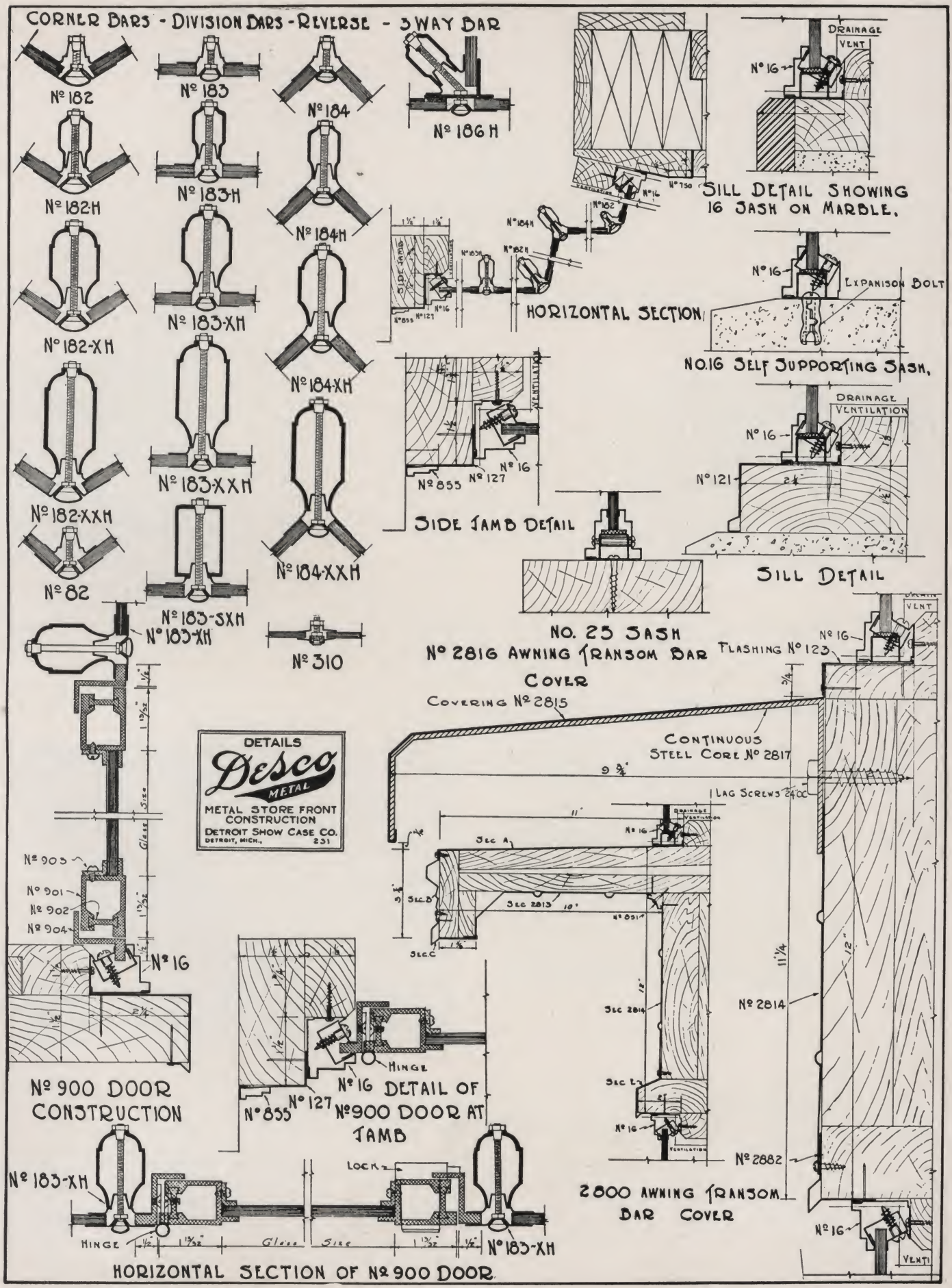
Distribution

Complete stocks of Desco in copper, bronze and aluminum alloy are carried at the Detroit factory and our New York warehouse, and by our distributers in nearly every important city of the United States and Canada.

Architectural Service

Full size details showing Desco in all its various combinations and uses will be mailed free to any architect on request. Thoroughly experienced store front field men are at the disposal of any architect for assistance of any kind.




CORNER BARS - DIVISION BARS - REVERSE - 3 WAY BAR
Nº 182
Nº 183
Nº 184
Nº 186 H
Nº 182-H
Nº 183-H
Nº 184-H
Nº 182-XH
Nº 183-XH
Nº 184-XH
Nº 182-XXH
Nº 183-XXH
Nº 184-XXH
Nº 82
Nº 183-SXH
Nº 183-XH
Nº 310
DRAINAGE
VENT
Nº 16
SILL DETAIL SHOWING 16 SASH ON MARBLE.
HORIZONTAL SECTION
EXPANISON BOLT
NO.16 SELF SUPPORTING SASH.
VENTILATION
Nº 855
Nº 127
SIDE JAMB DETAIL
Nº 121
SILL DETAIL
NO. 25 SASH
Nº 2816 AWNING TRANSOM BAR COVER
FLASHING Nº 123
COVERING Nº 2815
CONTINUOUS STEEL CORE Nº 2817
LAG SCREWS 24 OC
DETAILS
Desco
METAL
METAL STORE FRONT CONSTRUCTION
DETROIT SHOW CASE CO.
DETROIT, MICH., 231
Nº 903
Nº 901
Nº 902
Nº 904
Nº 16
Nº 900 DOOR CONSTRUCTION
HINGE
Nº 16 DETAIL OF Nº 900 DOOR AT JAMB
Nº 855
Nº 127
Nº 2814
Nº 2882
2800 AWNING TRANSOM BAR COVER
LOCK
Nº 183-XH
HINGE
Glass
Size
HORIZONTAL SECTION OF Nº 900 DOOR

AMERICAN 3 WAY-LUXFER PRISM CO.

1301-1305 South 55th Court
CICERO, ILL.
(Suburb of Chicago)

517 West 45th Street
NEW YORK, N. Y.

PRODUCTS DISTRIBUTED THROUGH ALL LEADING GLASS JOBBERS

Products

3 WAY-LUXFER PRESSED TILE DESIGNS.
3 WAY-LUXFER GEOMETRICAL DESIGN TRANSOMS.
3 WAY-LUXFER SHEET PRISM.

3-WAY Daylighting Products

They daylight, they ventilate, they beautify, they advertise, they add distinction

3 WAY-LUXFER VENTILATORS in Steel, Bronze and Aluminum.

For our Sidewalk and Vault Lights, Daylight Roofing and Ventilators and Obscuring and Diffusing Glass, see Manufacturers' Index.



3 Way-Luxfer Transom Lights Make the Store Front

What a Transformation

The illustrations, *above and below,* show a typical store front before and after installation of 3 Way-Luxfer transom lights and ventilators.

They Daylight
They Ventilate
They Beautify
They Advertise
They Add Distinction



3 Way-Luxfer Pressed Tile Designs

Transoms may be furnished as follows:
Specify either:

A—4x4 units of 3 Way Prism Tile (lens back) with dew drop border design.

B—4x4 units of Luxfer Prism Tile (flat back) with geometrical border design.

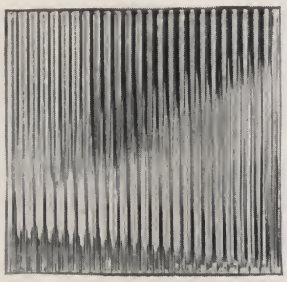
C—4x4 units of Lux Lens Tile with Spiro lens border.

D—Diamond pattern Lux Lens design.

E—6x6 Magnalite B Tile.

All can be furnished in zinc copper plated, chromium plated or solid copper, as desired.

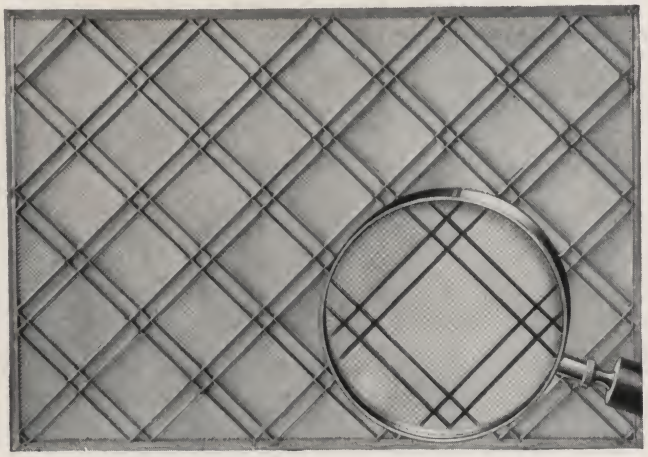
3 Way-Luxfer Sheet Prism



Glass cut to sizes from sheets as manufactured by Mississippi Wire Glass Co. Ideal for industrial plants, basement windows, garages, etc. Obscure, maximum light diffusion and transmission. Furnished either plain or wired. Specify 3 Way Flat Back or Lens Back Sheet Prism.

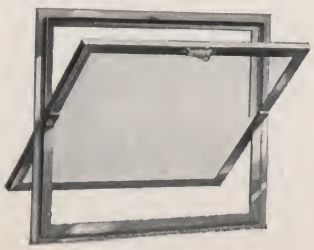
3 Way-Luxfer Modern Design Transoms

Architects and contractors, or owners, desiring a modernistic transom in harmony with this type of building can obtain suitable designs. Any number are available. Design 500 is shown below. Designs will be submitted on application. These panels are constructed with glass of a design arranged for maximum daylighting qualities and beauty throughout.



3 Way-Luxfer Ventilators

Rigid, durable and lasting construction in ventilators, made in steel with copper, bronze, galvanized or aluminum finish, as desired. Also made in extruded aluminum or bronze. Pivoted bottom, top or side hinged. Details will be sent on request. Sizes as desired. Specify 3 Way-Luxfer Ventilators.





"HIMCO" STORE FRONT CONSTRUCTION

OF

SOLID ROLLED STAINLESS

(Non-Magnetic)

CHROME-NICKEL

Chromium 18% Nickel 8%

OR

STAINLESS STEEL

(Non-Magnetic) 18% Chromium—8% Nickel

BRONZE AND ALUMCRO

ALUMINUM ALLOY

ARCHITECTURAL EXTRUDED

BRONZE AND ALUMCRO

The HIMMEL BROTHERS Co.

NEW HAVEN, CONN.

1932

CATALOGUE C

THE HIMMEL BROTHERS CO.

Extruded and Rolled Solid Metal Store Front Construction

200 Commerce Street, NEW HAVEN, CONN.

DISTRIBUTED BY GLAZIERS THROUGHOUT THE COUNTRY

Copyright 1932 by The Himmel Brothers Co.

Products Index

ARCHITECTURAL EXTRUDED BRONZE STORE FRONT CONSTRUCTION, Plate 400-1.
EXTRUDED BRONZE STANDARD MOULDINGS, Plate 400-1.
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SHOW CASE CONSTRUCTION, Plate 80-3.
SHOW CASE DOOR of COPPER or BRONZE, Hinged or Pivoted, Plate 80-3.
HOLLOW METAL MOULDINGS in Stock Shapes, Plate 60, 70, 80-3.
DOOR SADDLES of Cast Bronze, Plate 400-1.
BRONZE SADDLES, Plate 400-1.
Also Kickplates of Brass or Bronze.

HIMCO METAL STORE FRONT CONSTRUCTION TRADE-MARK

A Complete "Himco" Line in either Extruded or Rolled Solid Metal

We offer to the architect a complete glass setting construction either in architectural extruded sections for the highest quality store fronts, or in rolled solid metals for medium priced work.

We do not erect these constructions but the sections are stocked by reputable glaziers throughout the country and are generally erected through the glaziers, plate glass manufacturers, or setters.

The Essential Elements for Satisfactory Store Front Construction

The principal factor in satisfactory glass setting construction is in holding the glass in a cushion-like grip which counteracts shocks from wind or vibration and yet provides for expansion and contraction.

The setting member must be so arranged that it is possible to set and remove glass in a minimum amount of time in case of accident as well as in first erection. It must be a simple, quickly erected construction with a maximum amount of glass protection, with reduced labor charges.

Modern Metals for Glass Settings

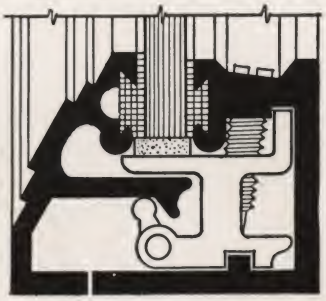
"Himco" Glass Settings are made in the following types of non-ferrous metals:

Extruded Metals—"Alumcro" (aluminum alloy) and bronze.

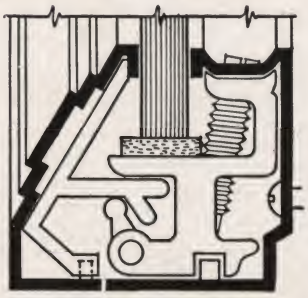
Rolled Solid Metals—Stainless Chrome-Nickel (chromium 18%, nickel 8%); Stainless Steel, 18-8; "Alumcro" (aluminum alloy); bronze; also copper on special order.

General Information Pertaining to Stainless Chrome-Nickel 18-8%

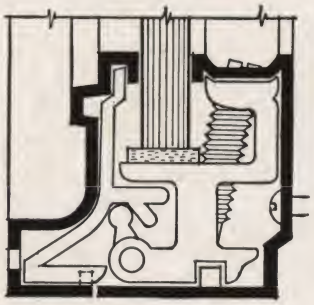
All Stainless Steel 18-8% is non-magnetic, non-tarnishable and rustproof. It can easily be detected by using a regular magnet which can be secured from any hardware store to verify if same is genuine 18-8 Chrome-Nickel or straight Chrome. Straight Chrome is magnetic and will magnet a certain amount of iron dust which is constantly flowing with the air and will settle on the Stainless thus causing a film of rust, whereas on the genuine Stainless 18-8 Chrome-Nickel which is non-magnetic said iron rust will not collect or stick to the Chrome-Nickel 18-8 therefore making it a superior metal over any other Stainless that is on the market.



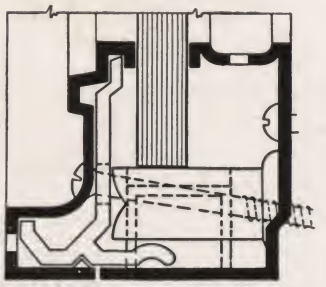
No. 404 Architectural Extruded Bronze Setting



No. 70 Setting, Rolled Solid Metal



No. 80 Setting, Rolled Solid Metal



No. 60 Setting, Rolled Solid Metal

The No. 400 Store Front Construction of Architectural Extruded Sections with the Cushion Glass Grip (Patented)

For the very finest type of modern store fronts. Glass settings can be supplied separately for cast bronze or aluminum alloy by others. The positive screw flange control (patented) eliminates all exposed screws and the rubber cushions or gaskets prevent glass breakage.

Rolled Solid Metal Glass Settings

These settings are equally as efficient as the extruded sections, in regard to glass protection but cost considerably less.

The No. 70 Glass Setting (Patented)—This is our newest modern design based on the No. 404 setting, but in rolled solid metals and having the same type of positive screw flange control, eliminating all exposed screws.

The No. 80 Glass Setting (Patented)—This construction has a screw flange control similar to No. 70 and does not have exposed screws. The design is similar to the No. 60 in face section.

The No. 60 Glass Setting (Patented)—The setting screws pass through a metal tube from the front to the back member assuring freedom from contact between the glass and the screw.

Finishes

The standard finish for bronze is polished or natural finish. Special finishes such as statuary bronze can also be supplied.

"Alumcro" supplied in natural and polished finish. Stainless Chrome-Nickel or Stainless Steel supplied in polished finish. Copper supplied on order in natural polished, statuary copper and oxidized copper.

Satin finish supplied on all metals.

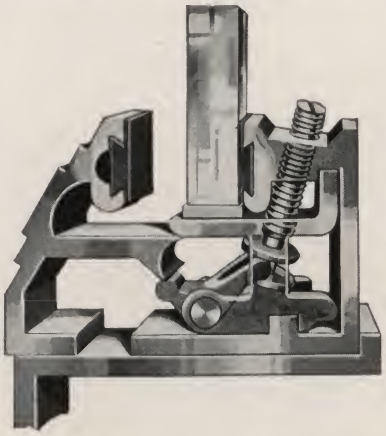
"HIMCO" NO. 400 STORE FRONT CONSTRUCTION

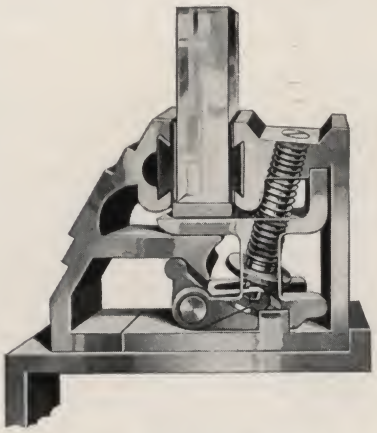
PATENTED

ARCHITECTURAL EXTRUDED "ALUMCRO" (Aluminum Alloy) AND BRONZE

A New Modern Improved "Himco" Invisible Screw Cushion Type, Extruded Setting (Patented)

The illustrations below show how radical is the new method of setting glass. Composed entirely of extruded shapes the new "Himco" No. 400 sections offer an entirely new feature in rigid store front constructions. In the old No. 400 setting the glass was held in a steady but velvet like grip by means of the rubber cushions, yet allowing the glass to expand and contract, and by the concealed adjusting screw. The new section is an even greater improvement over the old both in design as well as in the method of securing the glass by the new positive setting screw. The cushions are of the finest rubber.



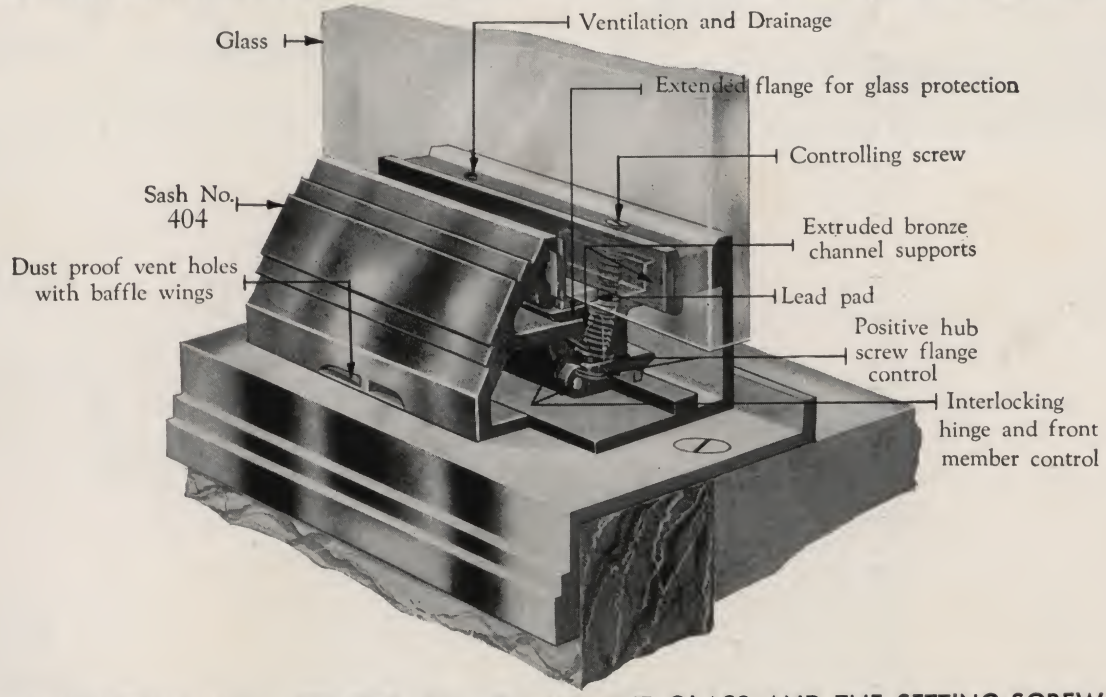


No Screws Show on the Face of the Setting

The setting consists of only two shapes, the front and back plates. By means of an indirect draw, acting on the interlocking members of extruded metals, glass set in "Himco" No. 404 setting is held more firmly than in the old type and less pressure is exerted on the glass. The setting screws, which cannot work loose, are also more available for setting the glass yet invisible from the exterior of the construction giving the appearance of strictly architectural cast construction.

The two sections at full size below illustrate the method by which the extruded lever arms are operated by means of this set screw. It is impossible for this screw to work loose, on account of vibration from the street, thus reducing tightening supervision necessary for many old types of construction.

FULL SIZE SECTIONS THROUGH GLASS SETTING SHOWING OPERATION OF THE SETTING SCREWS



CONSTRUCTION AND METHODS OF HOLDING THE GLASS AND THE SETTING SCREW

The Any Angle Extruded Corner Construction

The new lock gear type of corner construction allows the use of a universal section for any angles of 5 degrees desired. By locking the two center members together the wing pieces of the corner are made absolutely rigid. The only part which changes is the back spring grip. This is shipped to fit the correct angle desired.

Extruded Metals

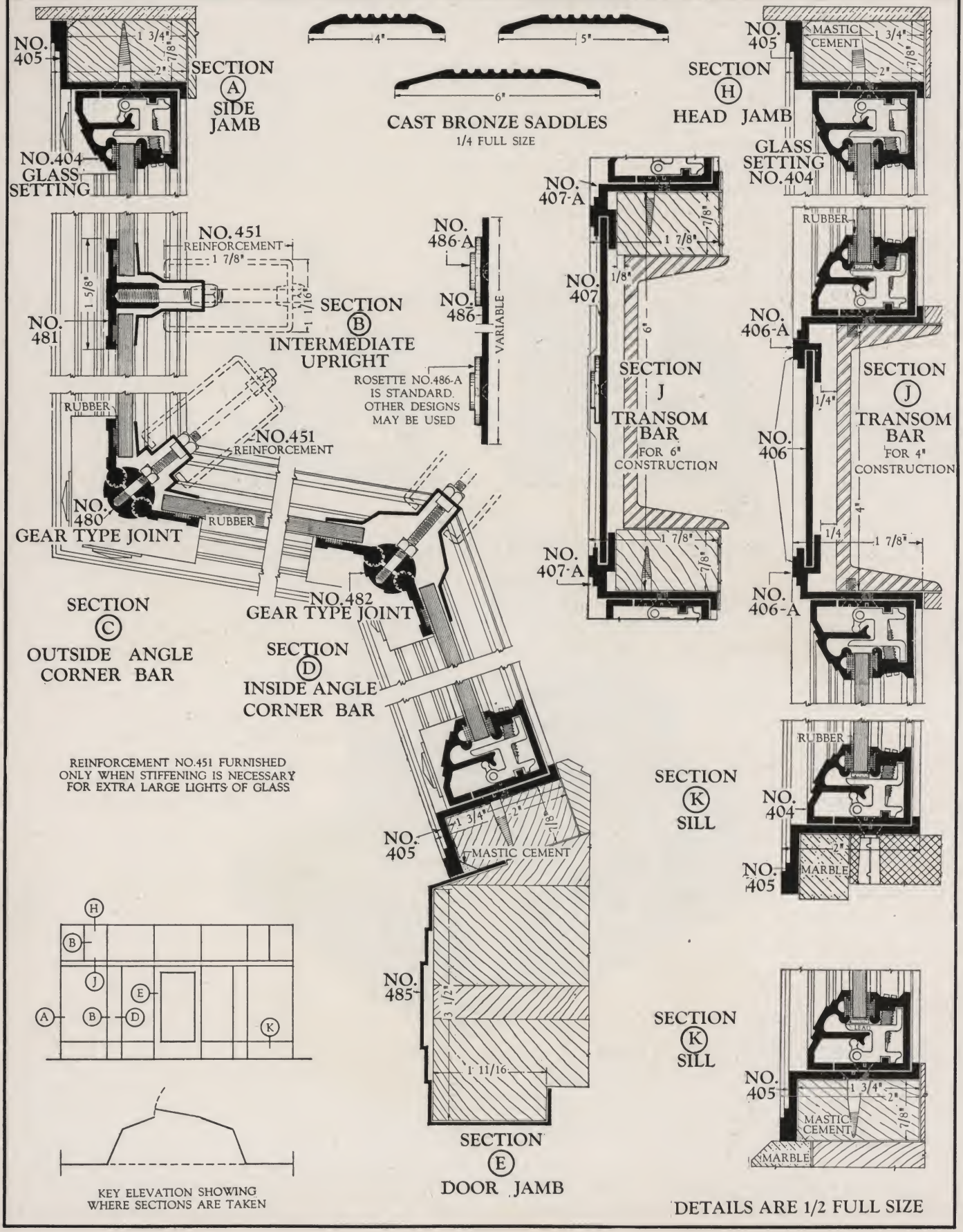
"Himco" No. 400 construction is made either in "Alumcro" (aluminum alloy) or in bronze. It is impossible to make this section in extruded Stainless Chrome-Nickel (chromium 18%—nickel 8%) or genuine Stainless Steel. If a white metal is desired we suggest using "Alumcro" made under our own direction which will stay bright and take a high polish.

In Specifying—We suggest that our glass settings be included for use with all cast bronze stone front construction, for the protection and easy accessibility of installing the glass, whether the work is done by an ornamental bronze contractor or the entire front is of our section. These sections have been designed and made by experts specializing in the protection of plate glass in window constructions for many years. We will be only too glad to advise with any architect or bronze contractor as to the best methods of using the sections with their types of special construction. Many times on account of incorrect detailing of the show windows, it is very hard to install plate glass at the building. This causes high labor charges and disatisfaction and misunderstandings arising between the owner and the architect and contractor.

"HIMCO" NO. 400 STORE FRONT CONSTRUCTION

EXTRUDED, ARCHITECTURAL SECTIONS OF "ALUMCRO" AND BRONZE
(ALUMINUM ALLOY)

400/1



"HIMCO" NO. 70 STORE FRONT CONSTRUCTION

PATENTED

THE NEW, INEXPENSIVE MODERN GLASS SETTING WITHOUT EXPOSED SCREWS

Made in Rolled Solid "Alumcro" (aluminum alloy) and Bronze. Made in Copper only on Special Order

A New Design of Modern Trend

The new "Himco" No. 70 has been designed along the lines desired in the most modern types of buildings. An effort has been made to reduce the depth of the entire construction to the least possible dimension. Flat surfaces, rather than projecting mouldings, allow the glass to be set almost on the building line, when this condition is desired. The smooth plain faces without visible fastenings also gives the effect of an extruded or cast construction.

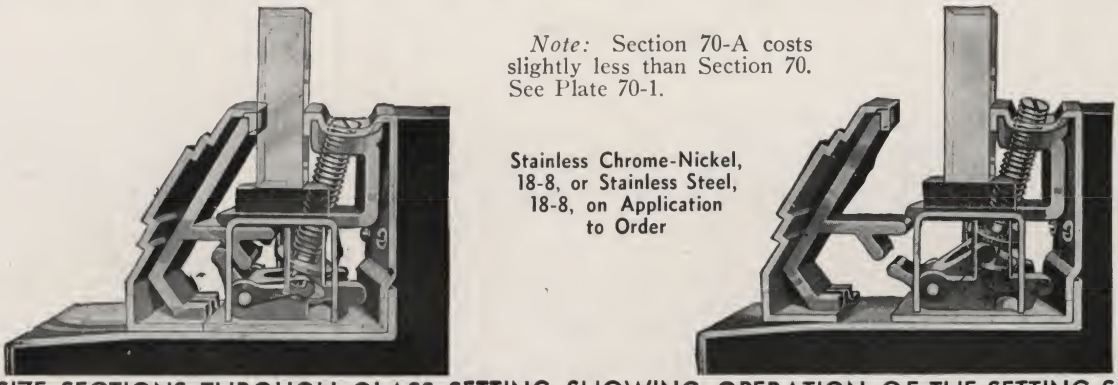
A New Type Positive Setting Without Exposed Screws

"Himco" No. 70 glass setting is similar in principle to the "Himco" No. 404 setting—in that all screws on the face of the construction are eliminated. This new setting is absolutely positive in action and the screw will not work loose by street vibrations.

By means of an indirect draw acting with a lever on interlocking members of extruded bronze, glass is held more firmly than in the exposed screw type sash, though less pressure is exerted on the glass. This permits the window to give to vibration and atmospheric changes, thus reducing the danger of breakage from exterior causes. The glass is further protected by the use of leather cushions on a stationary extended flange. This flange, part of the solid controlling base, safeguards the glass from contact with moving parts.

Displays Remain Clean Longer

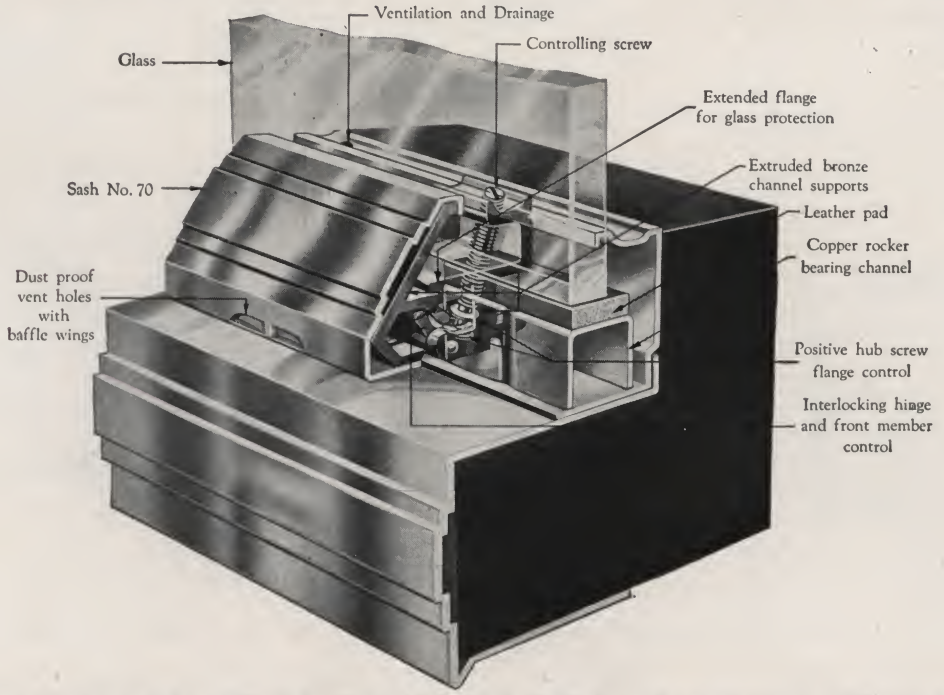
As the new sash is set squarely on the sill no matter what thickness of glass used, it reduces the possibility of infiltration of dust to the inside. The baffle wings behind the exterior vents also help to divert dust yet allow ventilation. They eliminate dust slides.



Note: Section 70-A costs slightly less than Section 70. See Plate 70-1.

Stainless Chrome-Nickel, 18-8, or Stainless Steel, 18-8, on Application to Order

FULL SIZE SECTIONS THROUGH GLASS SETTING SHOWING OPERATION OF THE SETTING SCREW



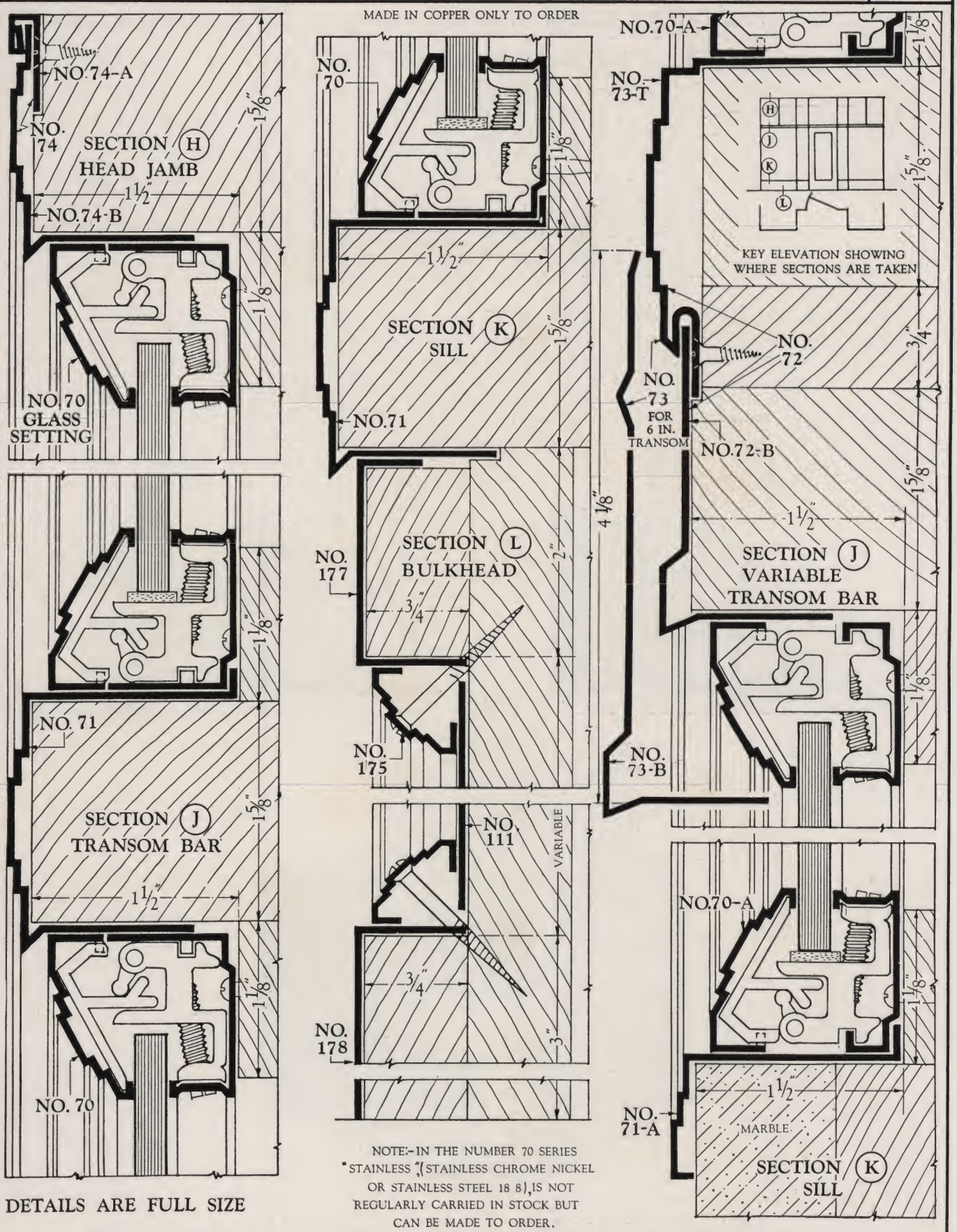
CONSTRUCTION AND METHODS OF HOLDING THE GLASS AND THE SETTING SCREW

"HIMCO" NO. 70 STORE FRONT CONSTRUCTION

ROLLED, SOLID, "ALUMCRO" AND BRONZE — STAINLESS STEEL ON APPLICATION

(ALUMINUM ALLOY)

70/1



DETAILS ARE FULL SIZE

NOTE:- IN THE NUMBER 70 SERIES "STAINLESS" (STAINLESS CHROME NICKEL OR STAINLESS STEEL 18 8), IS NOT REGULARLY CARRIED IN STOCK BUT CAN BE MADE TO ORDER.

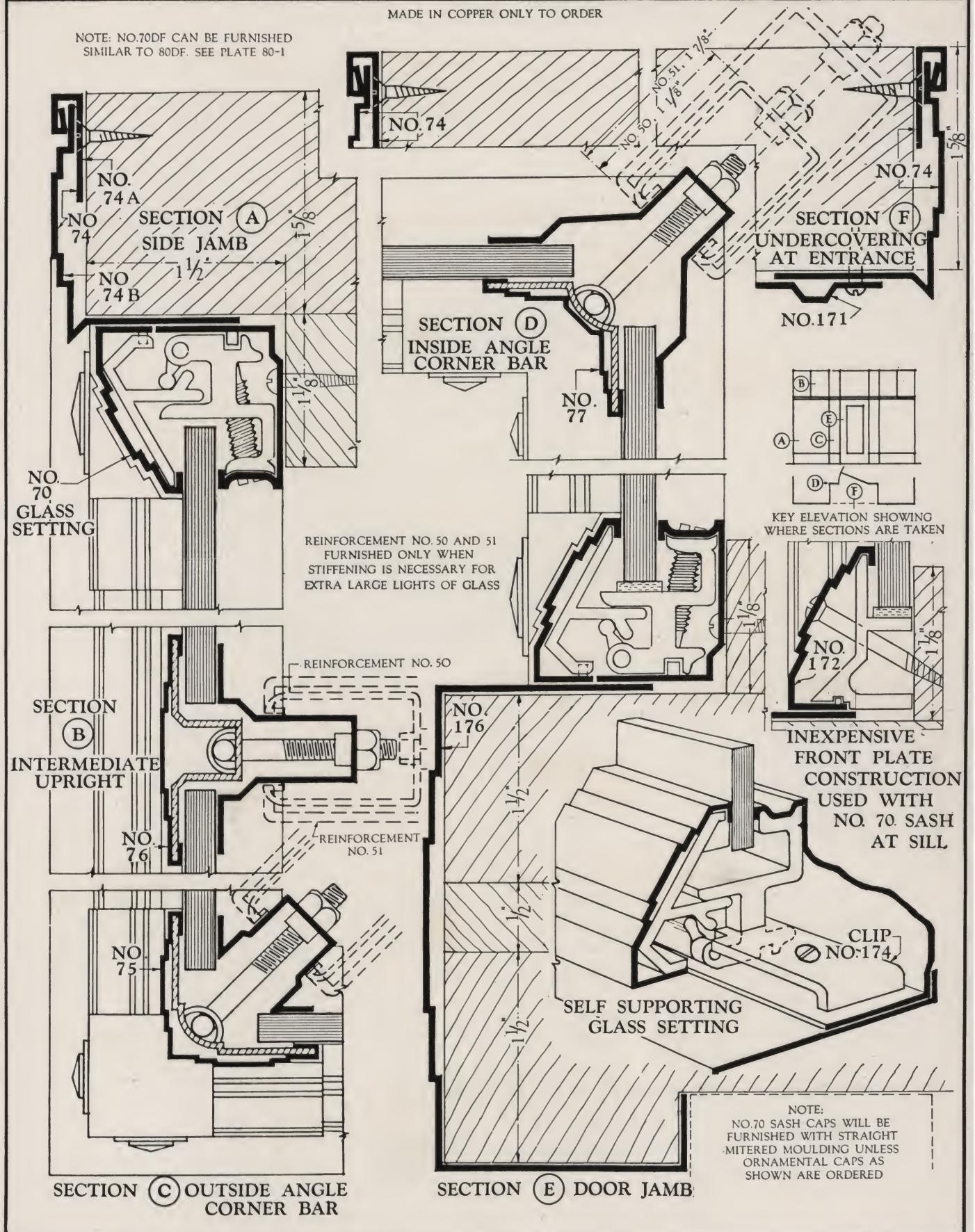
"HIMCO" NO. 70 STORE FRONT CONSTRUCTION

ROLLED, SOLID, "ALUMCRO" AND BRONZE—STAINLESS STEEL ON APPLICATION
(ALUMINUM ALLOY)

70/2

MADE IN COPPER ONLY TO ORDER

NOTE: NO. 70DF CAN BE FURNISHED SIMILAR TO 80DF. SEE PLATE 80-1



"HIMCO" NO. 80 STORE FRONT CONSTRUCTION

PATENTED

ROLLED SOLID STAINLESS CHROME-NICKEL (Chromium 18%, Nickel 8%), "ALUMCRO" (Aluminum Alloy) AND BRONZE

Copper Made Only on Special Order

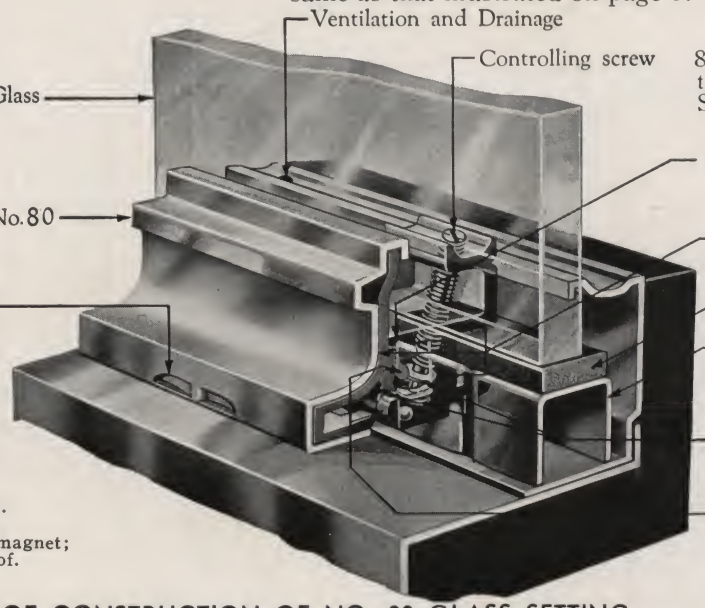
The particular advantage of this section is that it can be obtained in Rolled Solid Stainless Chrome-Nickel (chromium 18%—nickel 8%).* On account of the hardness and non-corrosive character of this metal, the slight extra cost more than offsets the reduced cost of upkeep. The metal will withstand the corrosive action of acids and smoke. Its surface is impervious to atmospheric conditions and will always retain its high polish and brilliance. This section is also produced in rolled solid "Alumcro" (aluminum alloy), and bronze.

This glass setting is similar in construction to The No. 70 setting except that the design of the profile is different. It is a vast improvement over our No. 60 setting, the details of which are also shown on page 12. The new No. 80 has no screws on the face of the setting. The setting is absolutely positive in action and the screw will not work loose by vibration from the street.

The action of the indirect draw, acting with a lever, on interlocking members of extruded bronze is the same as that illustrated on page 5.

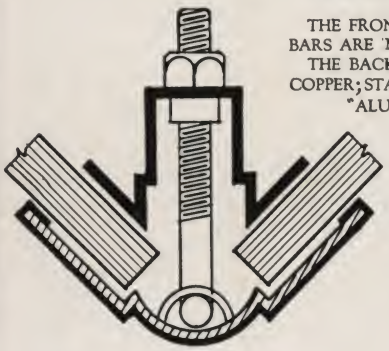
Ventilation and Condensation—There is a direct system of ventilation on all sides of the glass setting. The front vent holes indicated on the drawings have dust-proof baffle wings which prevent direct drafts and dust from entering show windows due to wind pressure or storms. This eliminates the use of troublesome dust slides.

* This metal cannot be picked up with a magnet; it is therefore non-magnetic and rust-proof.



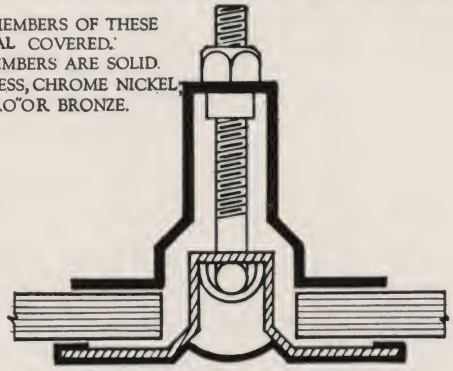
Note: Section No. 80-A costs slightly less than Section No. 80. See Plate 80-1.

DETAIL OF CONSTRUCTION OF NO. 80 GLASS SETTING



CORNER BAR NO. 41

THE FRONT MEMBERS OF THESE BARS ARE 'METAL COVERED.' THE BACK MEMBERS ARE SOLID. COPPER; STAINLESS, CHROME NICKEL, "ALUMCRO" OR BRONZE.



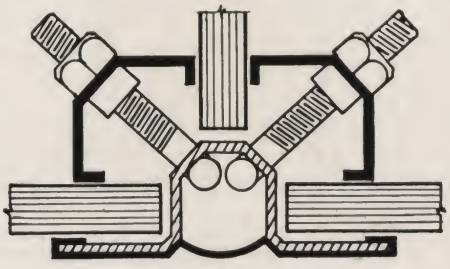
DIVISION BAR NO. 45



REVERSE BAR NO. 42

Corner Bars—These are made to fit any angle of glass setting desired. The patented method of bolting together the outer and inner sections, eliminates the use of clips, one of the commonest causes of glass breakage.

The bar constructions not only permit glass of varying thicknesses to be joined but provide equal pressure on both pieces of glass.



3-WAY BAR NO. 48

Construction of Corner—The corners are formed up of rolled steel sections to give rigidity and strength and are bronze plated. The sections exposed to the weather are covered with rolled copper, bronze, Stainless Chrome-Nickel or "Alumcro."

Use of Corner Bars—The rolled steel corner bars are used interchangeably with either the No. 60, 70 or 80 type of setting.

FULL SIZE DETAILS OF CORNER AND DIVISION BARS

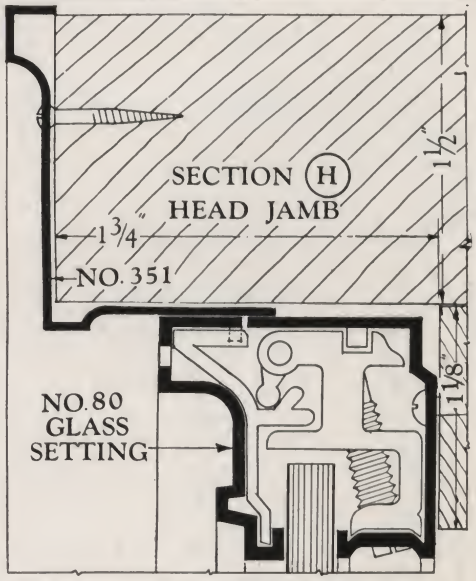
"HIMCO" NO. 80 STORE FRONT CONSTRUCTION

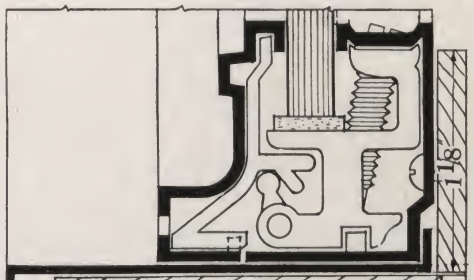
ROLLED, SOLID, STAINLESS, CHROME-NICKEL, "ALUMCRO" (ALUMINUM ALLOY) AND BRONZE

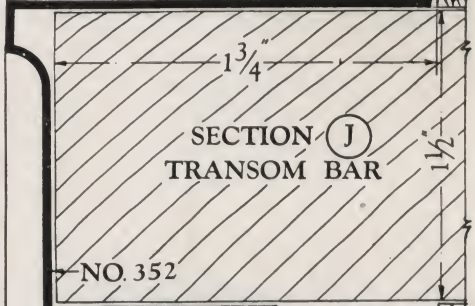
(CHROMIUM 18%) (NICKEL 8%)

80/1

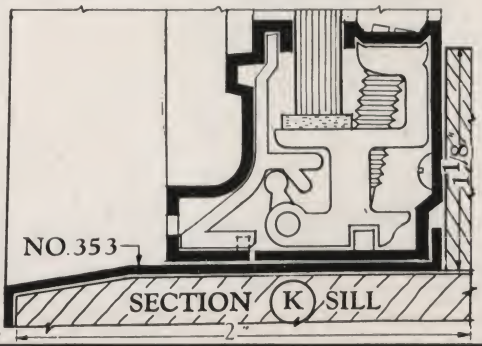
MADE IN COPPER ONLY TO ORDER

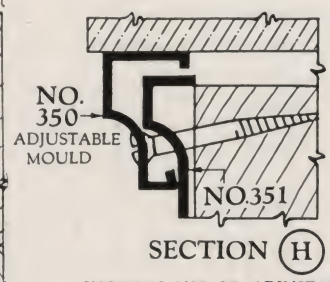




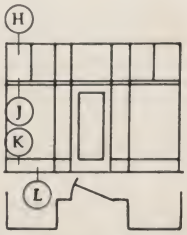




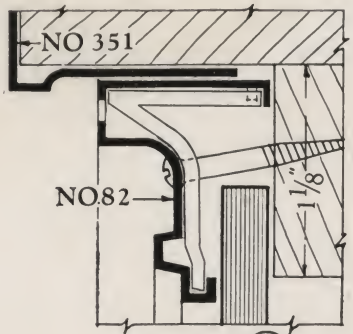




SHOWING USE OF ADJUSTABLE MOULD NO. 350

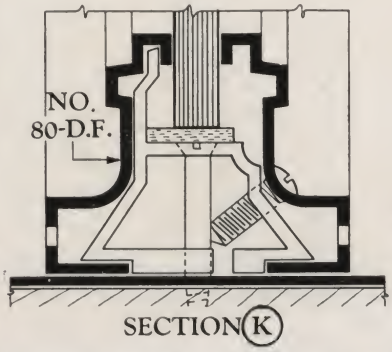


KEY ELEVATION SHOWING WHERE SECTIONS ARE TAKEN

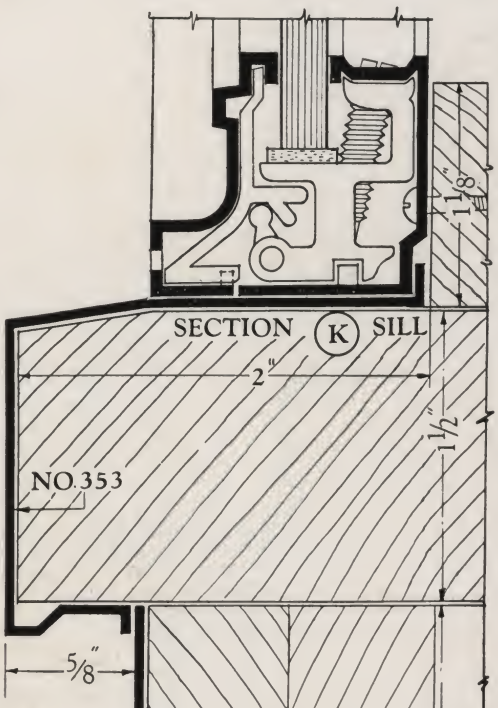


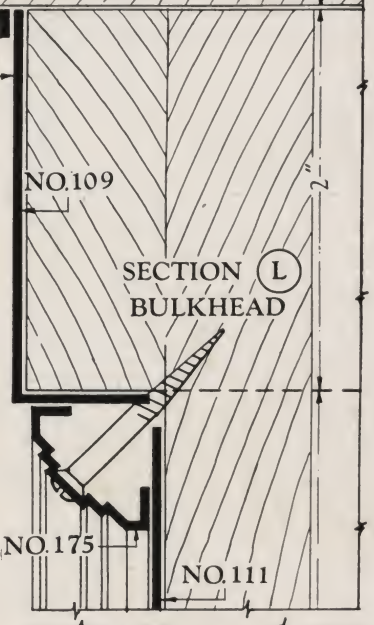
INEXPENSIVE FRONT PLATE CONSTRUCTION

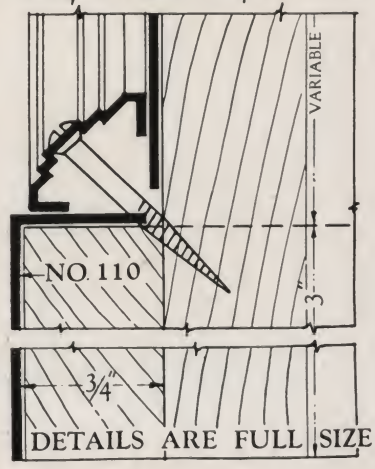
DETAIL ABOVE SHOWS NO.82 FRONT PLATE, WHEN USED WITH NO.80 SASH AT SILL IT PROVIDES AN INEXPENSIVE STORE FRONT CONSTRUCTION. IT DOES NOT HOWEVER AFFORD VENTILATION. FOR MAXIMUM GLASS PROTECTION USE NO.80 GLASS SETTING



FREE STANDING GLASS SETTING IN DOUBLE FACED MEMBERS







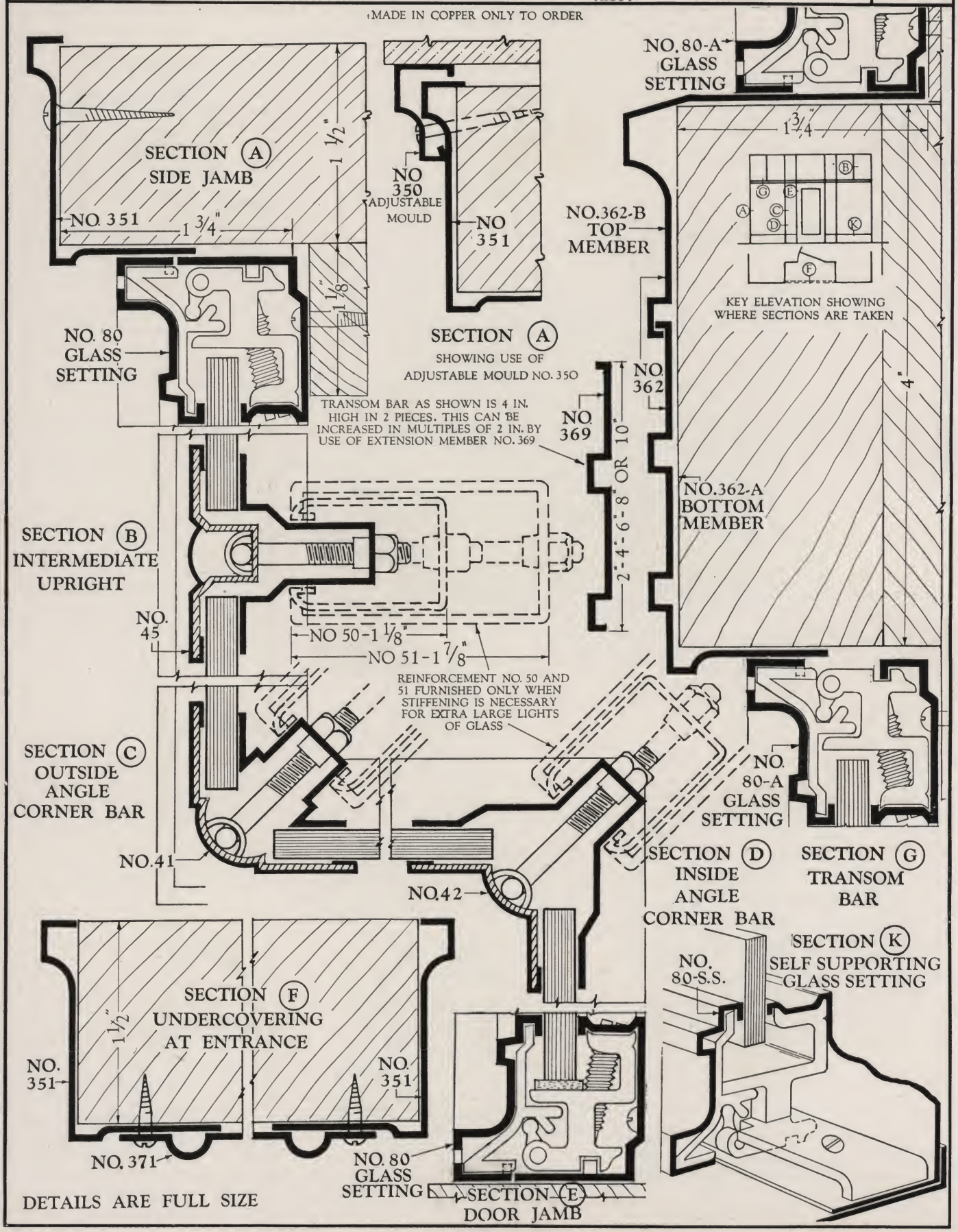
DETAILS ARE FULL SIZE

"HIMCO" NO. 80 STORE FRONT CONSTRUCTION

ROLLED, SOLID, STAINLESS, CHROME-NICKEL, "ALUMCRO" AND BRONZE
(CHROMIUM 18%) (NICKEL 8%) (ALUMINUM ALLOY)

80/2

MADE IN COPPER ONLY TO ORDER



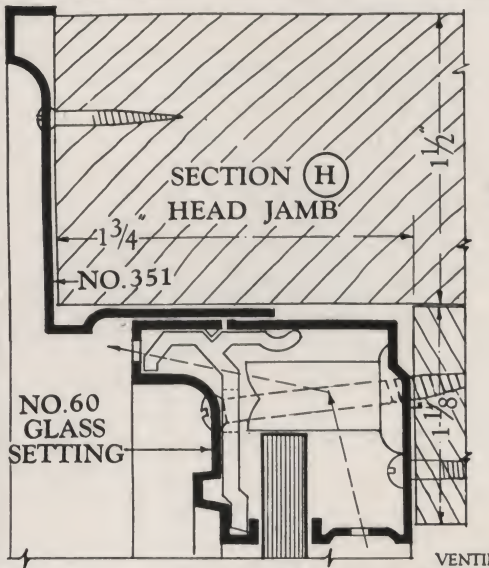
DETAILS ARE FULL SIZE

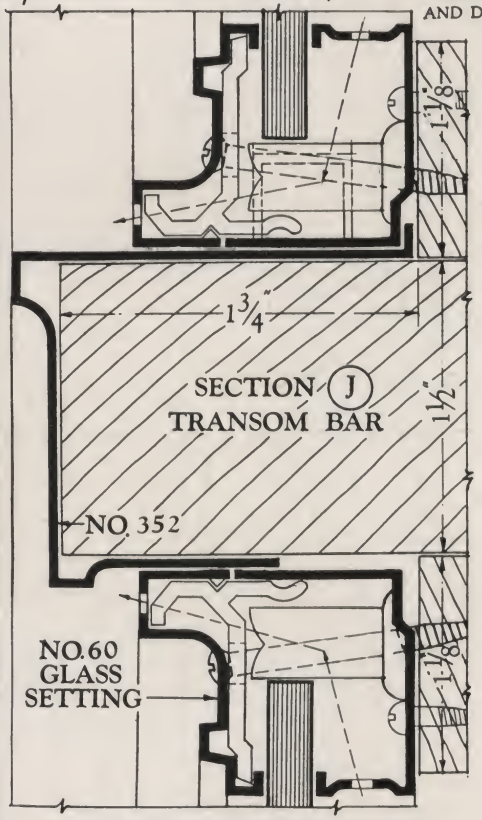
"HIMCO" NO. 60 STORE FRONT CONSTRUCTION

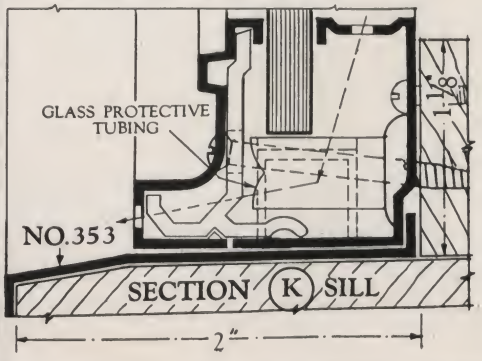
ROLLED, SOLID, STAINLESS, CHROME-NICKEL, "ALUMCRO" AND BRONZE
(CHROMIUM 18%) (NICKEL 8%) (ALUMINUM ALLOY)

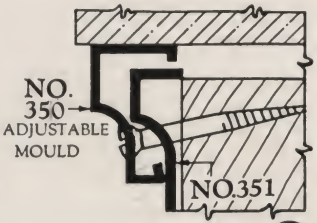
60/1

MADE IN COPPER ONLY TO ORDER

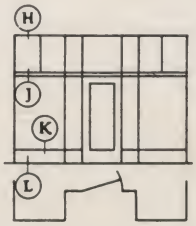




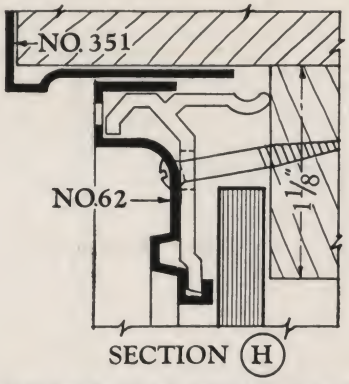




SHOWING USE OF ADJUSTABLE MOULD NO.350

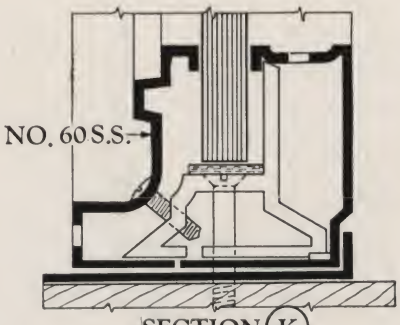


KEY ELEVATION SHOWING WHERE SECTIONS ARE TAKEN

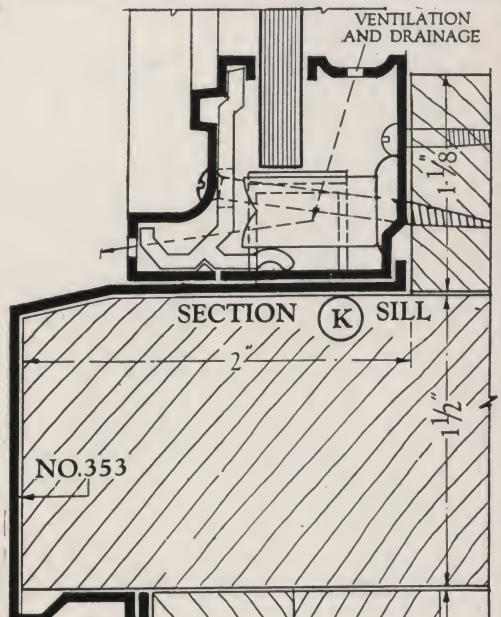


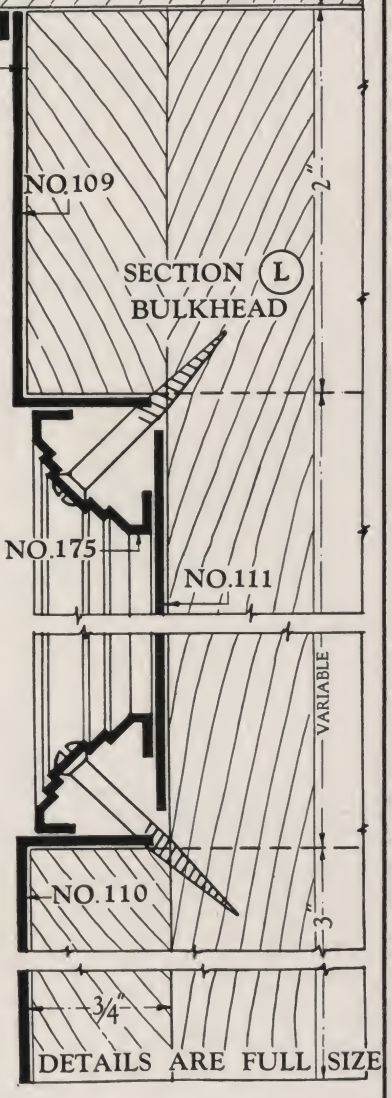
INEXPENSIVE FRONT PLATE USED WITH NO. 60 SASH

DETAIL ABOVE SHOWS NO.62 FRONT PLATE, WHEN USED WITH NO.60 SASH AT SILL IT PROVIDES AN INEXPENSIVE STORE FRONT CONSTRUCTION. IT DOES NOT HOWEVER AFFORD VENTILATION. FOR MAXIMUM GLASS PROTECTION USE NO.60 GLASS SETTING



SELF SUPPORTING GLASS SETTING

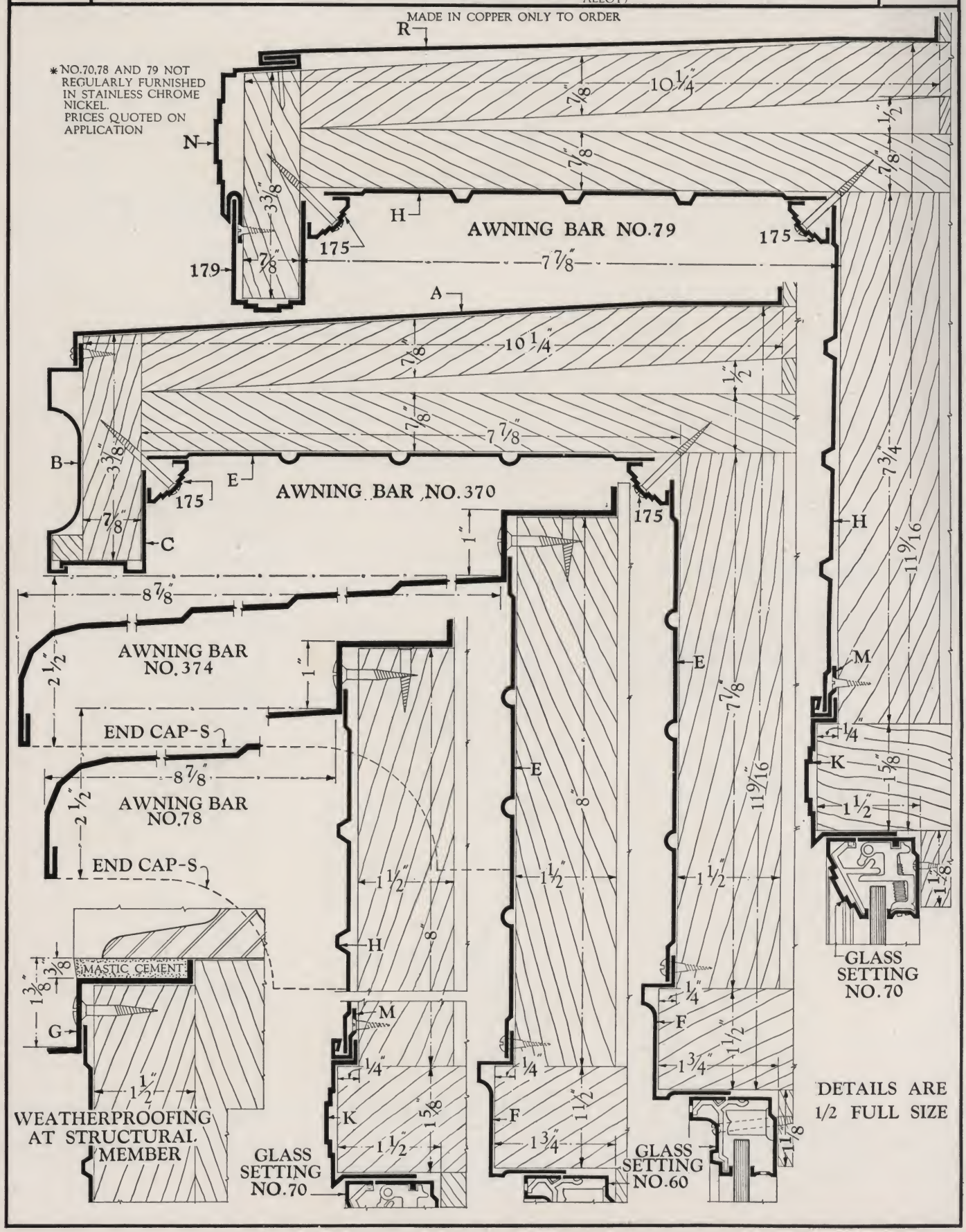




"HIMCO" NO 60, 70, *80, STORE FRONT CONSTRUCTION

ROLLED, SOLID, STAINLESS, CHROME-NICKEL, "ALUMCRO" AND BRONZE
(CHROMIUM 18%) (NICKEL 8%) (ALUMINUM ALLOY)

60-70-80
3

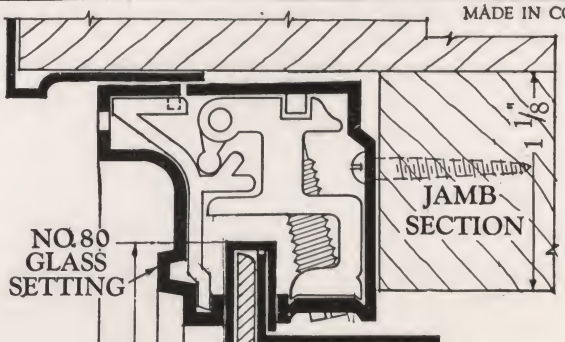


"HIMCO" SHOW CASE CONSTRUCTION

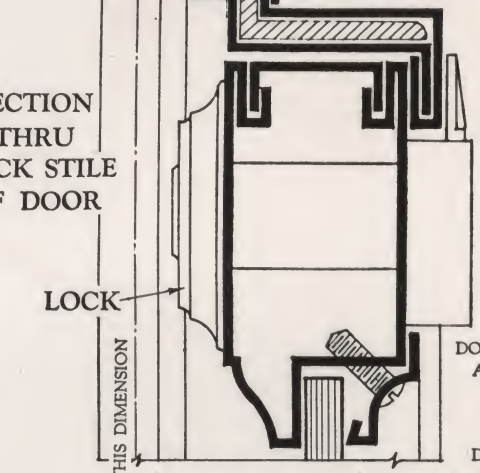
ROLLED, SOLID, STAINLESS CHROME-NICKEL, "ALUMCRO" AND BRONZE
(CHROMIUM 18%) (NICKEL 8%) (ALUMINUM ALLOY)

80/3

MADE IN COPPER ONLY TO ORDER



SECTION THRU LOCK STILE OF DOOR

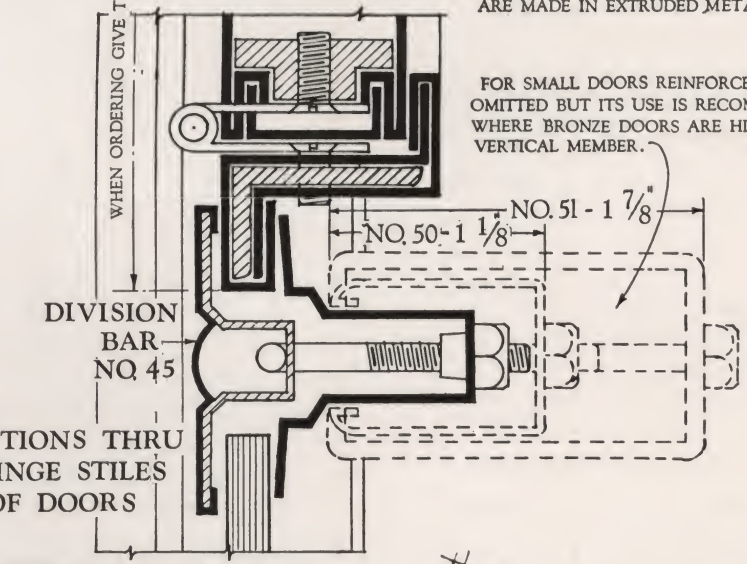


THESE DETAILS SHOW HOW READILY "HIMCO" DOOR CONSTRUCTION MAY BE USED WITH OUR REGULAR STORE FRONT CONSTRUCTION.

DOORS AND GLASS MAY BE INTERCHANGED ANY TIME IT IS DESIRED TO CHANGE SHOW CASE.

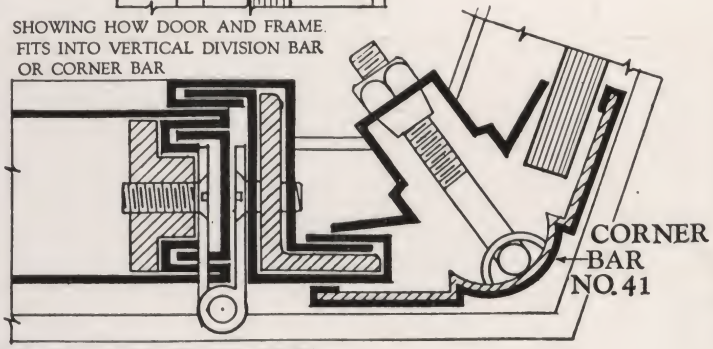
DOORS OF ALUMCRO (ALUMINUM ALLOY) ARE MADE IN EXTRUDED METAL ONLY.

FOR SMALL DOORS REINFORCEMENT IS OMITTED BUT ITS USE IS RECOMMENDED WHERE BRONZE DOORS ARE HINGED TO VERTICAL MEMBER.

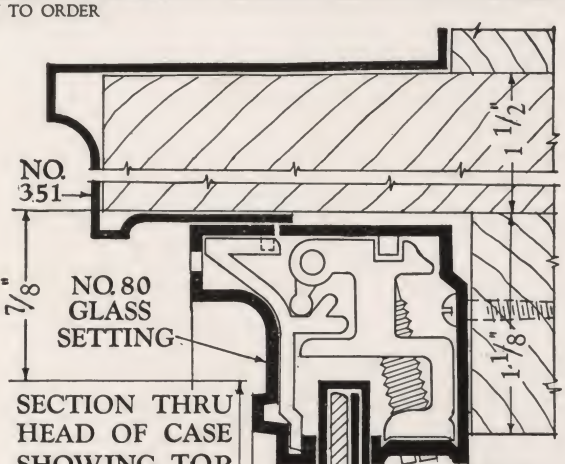


SECTIONS THRU HINGE STILES OF DOORS

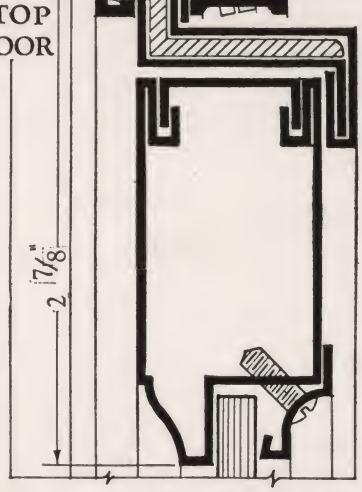
SHOWING HOW DOOR AND FRAME FITS INTO VERTICAL DIVISION BAR OR CORNER BAR

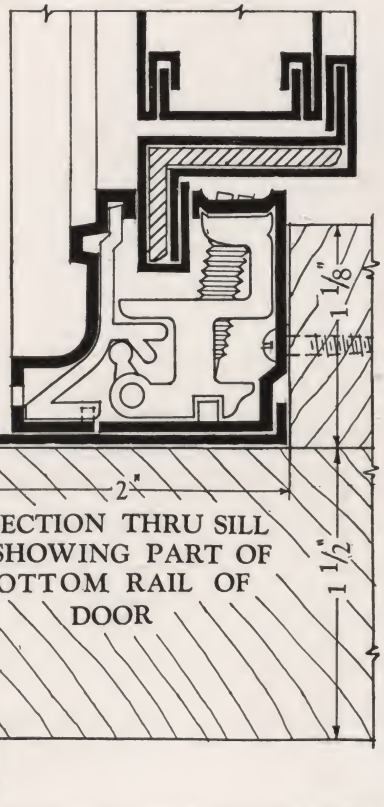


DETAILS ARE FULL SIZE



SECTION THRU HEAD OF CASE SHOWING TOP RAIL OF DOOR





"HIMCO"

STAINLESS METAL STORE FRONT CONSTRUCTION



THE HIMMEL BROTHERS CO. · · · NEW HAVEN, CONN.

THE MICHAELS ART BRONZE COMPANY

Orna-Metal Craftsmen Since 1870

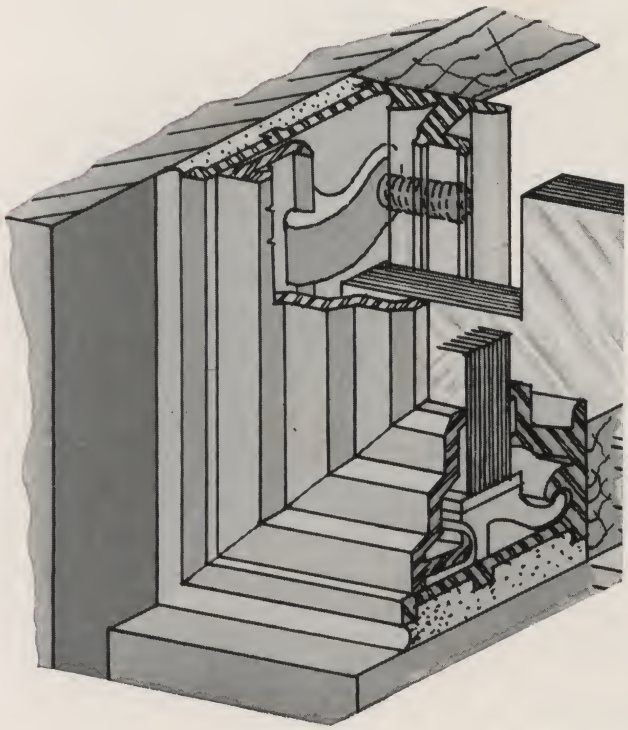
235-241 Court Avenue
COVINGTON, KY.

(Three minutes from the heart of Cincinnati, Ohio)

REPRESENTATIVES IN PRINCIPAL CITIES

For our pages on Ornamental Iron and Bronze and Weatherstripping, see Manufacturers' Index

MICHAELS PATENTED STORE FRONTS



Michaels construction is specified because of distinct design and practical points of advantage.

For instance, no putty is necessary in setting glass—easy to glaze. Impossible for screws to work loose from vibration.

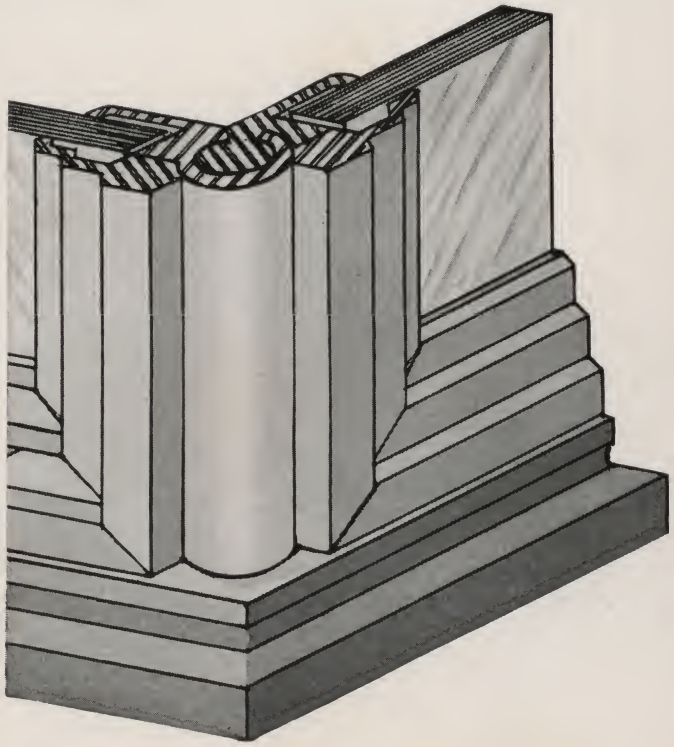
Fabricated in Aluminum and Extruded Bronze.

Weep holes take care of condensation.

Lead cushion acts as a seat for glass.

Any finish may be applied.

Screw adjustment on lever causes a spring tension on glass to absorb vibration, expansion and contraction.



Any angle may be obtained by the adjustable swivel corner without losing the general shape or lines in design.

Full size details furnished upon request.

THE KAWNEER COMPANY

Rustless Metal Store Fronts

GENERAL OFFICES
NILES, MICHIGAN

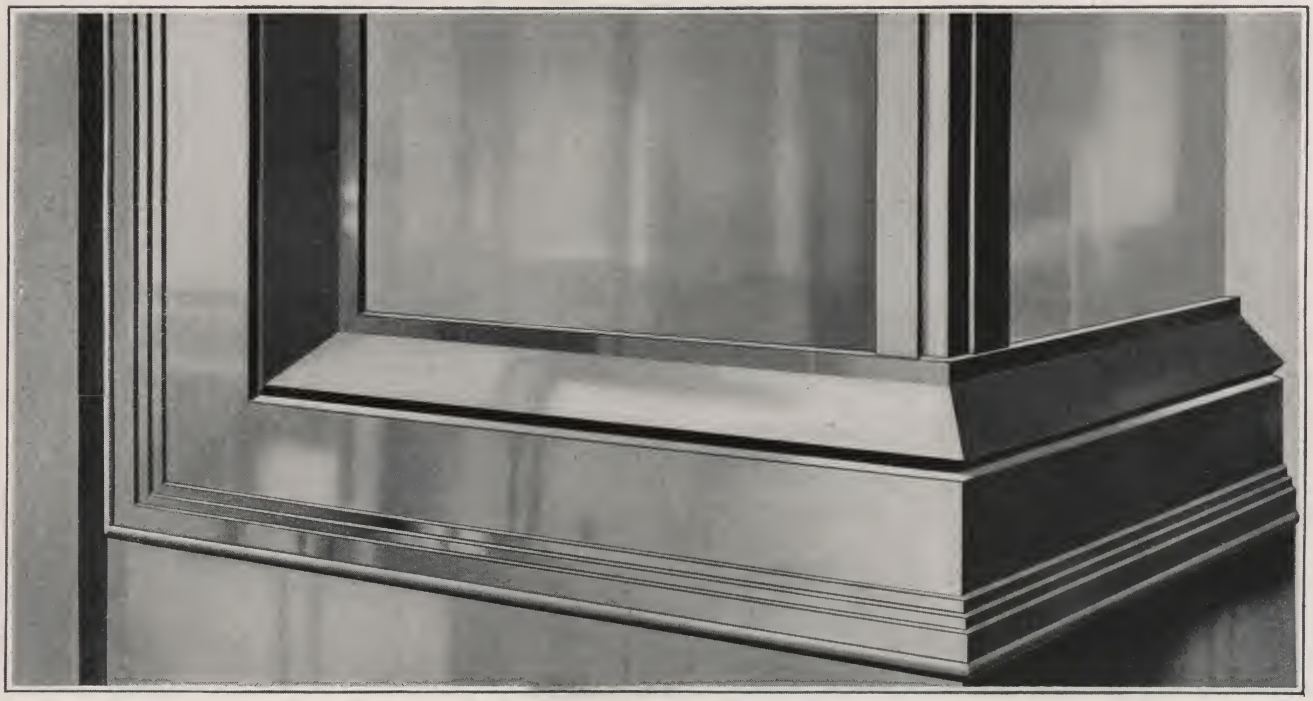
FACTORIES
CHICAGO, ILLINOIS — NILES, MICHIGAN — BERKELEY, CALIFORNIA

BRANCH OFFICES
NEW YORK, NEW YORK — CHICAGO, ILLINOIS — WASHINGTON, D. C. — ATLANTA, GEORGIA

PERMANENT EXHIBIT AT THE ARCHITECTS SAMPLES CORPORATION, NEW YORK, N. Y.

For Kawneer Sealair Windows and Rustless Metal Doors, see Manufacturers' Index

STORE FRONTS



Assembled Units of "B" Construction

The modern character and strength of Kawneer "B" Construction are evidenced by the accompanying illustrations. Mechanically it is simple and practical. Only one type of screw is used for uniting front and rear members of sash and bars. Possessing considerable strength and size, this screw can be readily adjusted and handled with ease, thus facilitating the process of installation. Another desirable advantage indicated on the following details is the absence of screws from the face of all moulding covers. This arrangement beautifies the store front, giving at moderate cost the effect of solid cast sections. Ventilation and drainage provided for if desired. Furnished in solid bronze or aluminum alloy, in a variety of finishes. Full size details sent on request.

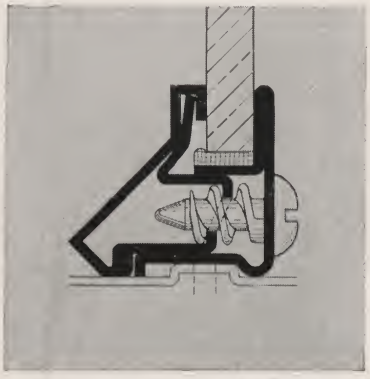
THE Kawneer COMPANY NILES, MICH.



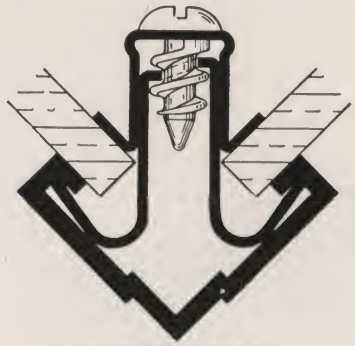
"B" Construction Extruded Sash
KE-B-1



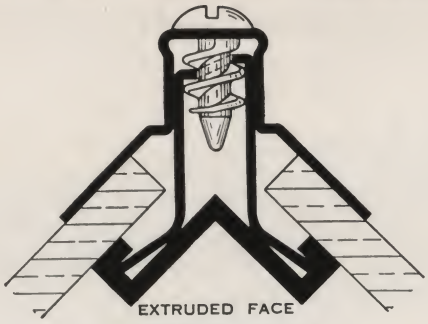
Corner caps furnished when desired
Patents and Copyright Applied For



"B" Construction Cold Rolled Sash
B-1



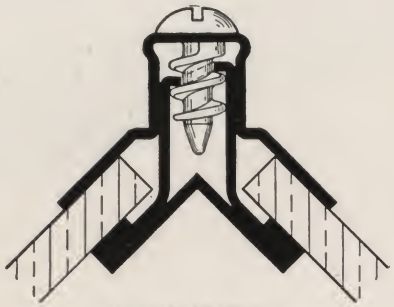
EXTRUDED FACE
CORNER BAR KE-B-2



EXTRUDED FACE
REVERSE BAR KE-B-4



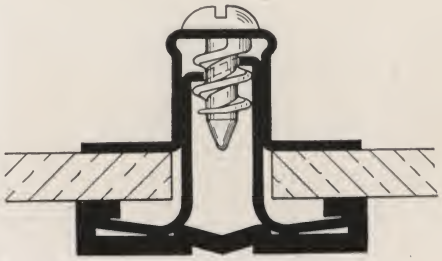
CORNER BAR B-2
FURNISHED IN VARIOUS ANGLES



REVERSE BAR B-4
FURNISHED IN VARIOUS ANGLES

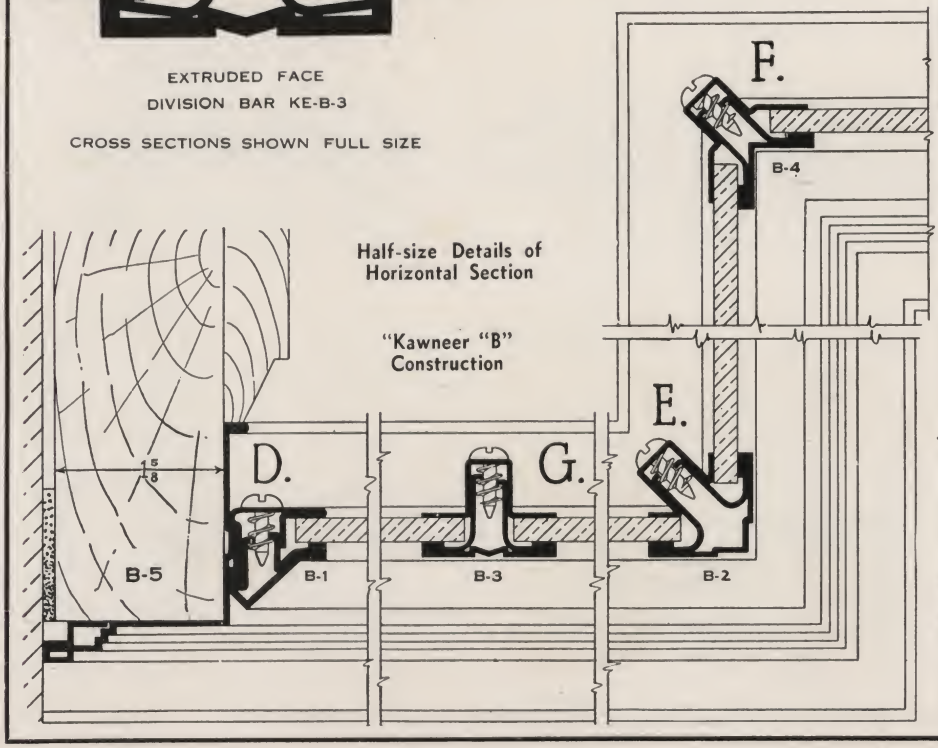


DIVISION BAR B-3



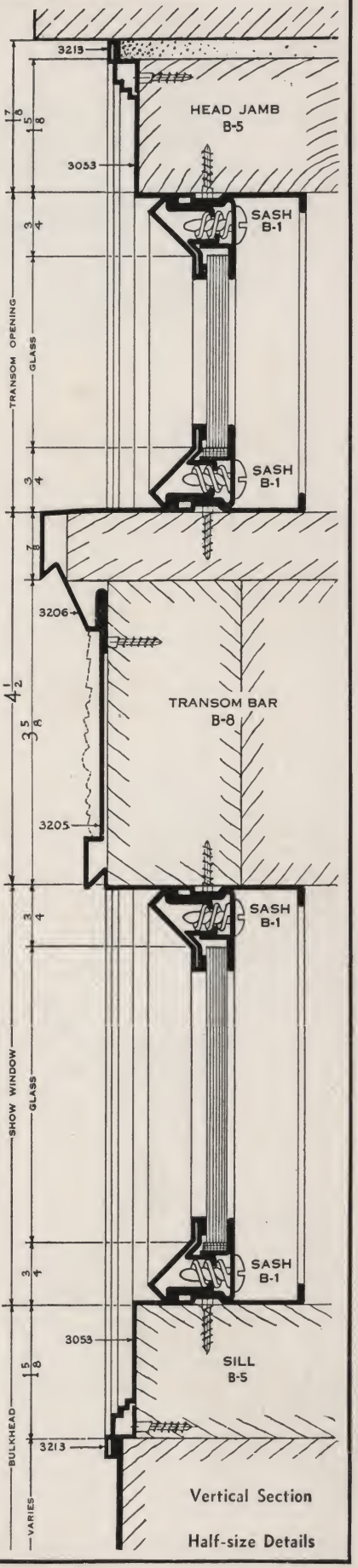
EXTRUDED FACE
DIVISION BAR KE-B-3

CROSS SECTIONS SHOWN FULL SIZE



Half-size Details of
Horizontal Section

"Kawneer "B"
Construction

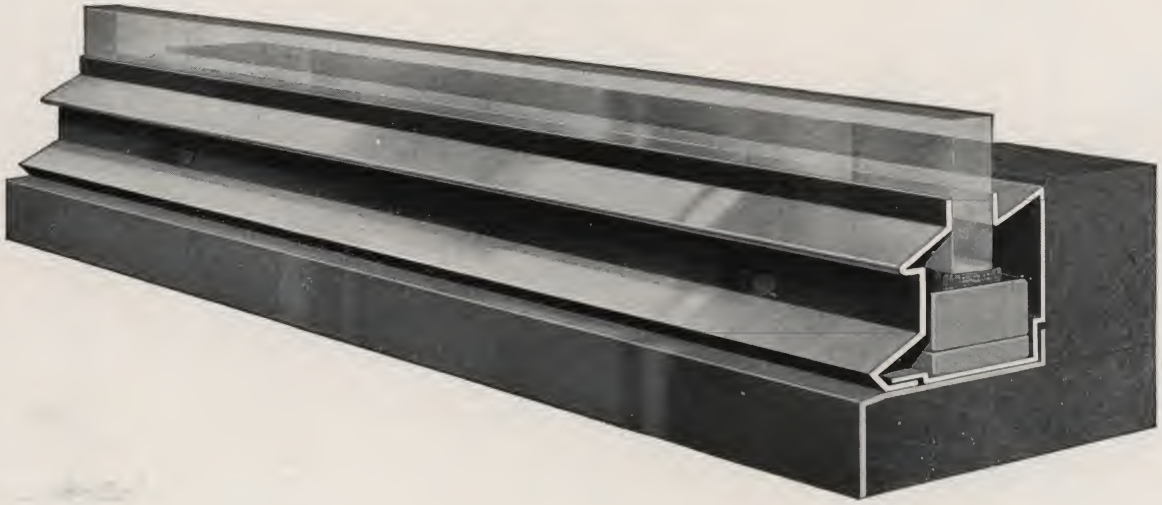


Vertical Section

Half-size Details

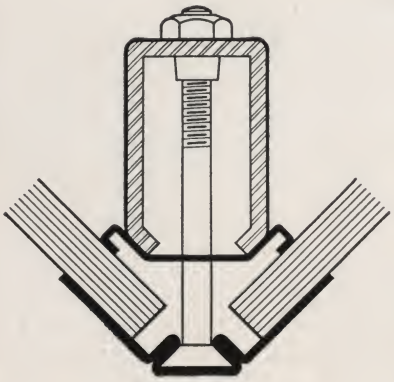
KAWNEER STORE FRONTS

NO. 77 SASH AND ACCOMPANYING BARS

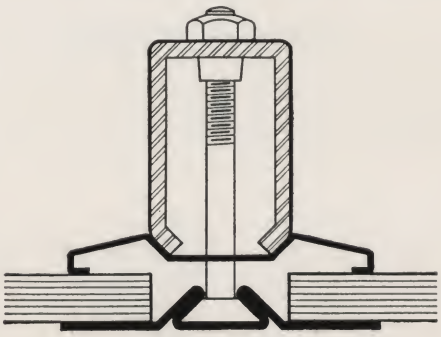


No. 77 Sash is made of solid cold rolled bronze or aluminum alloy, designed to harmonize with any architectural treatment. The detail above shows the manner in which setting block is held in positive position. Vent holes in gutter and face (optional) provide ventilation and drainage. This sash is compact and distinctive in appearance. It is easily installed, as may be noted by the details on the following page. The bars can be furnished in any practical angle.

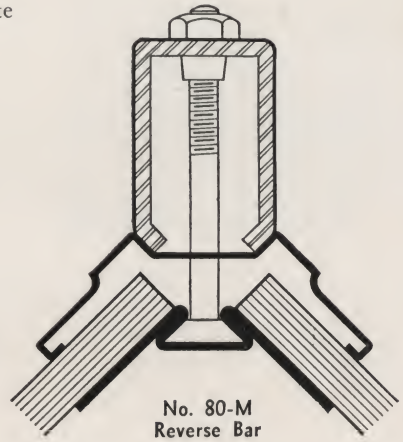
Write for Further Information and Complete Full Size Details



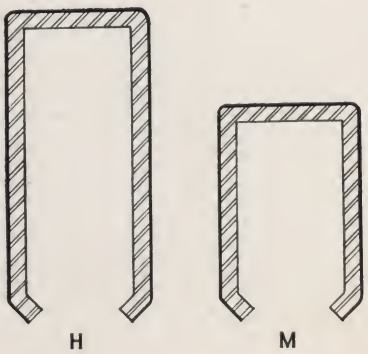
No. 78-M
Corner Bar



No. 79-M
Division Bar



No. 80-M
Reverse Bar



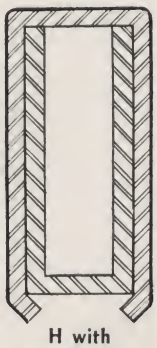
H M L

Bar Stiffeners

These bars are furnished with "L" (light), "M" (Medium), or "H" (heavy) steel stiffeners as specified.

All stiffeners are furnished with a protective coating. Letter following bar number denotes size of stiffener.

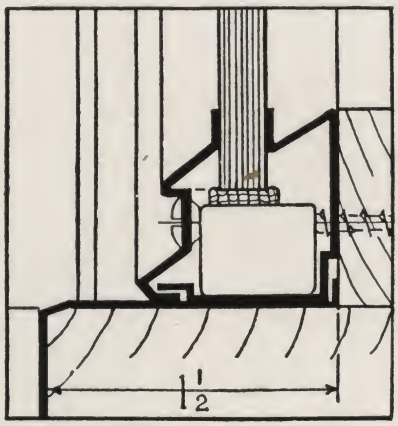
For added strength, a special reinforcing core, No. 3603, can be supplied with "H" stiffeners when desired



H with
No. 3603

Patents and Copyright Applied For

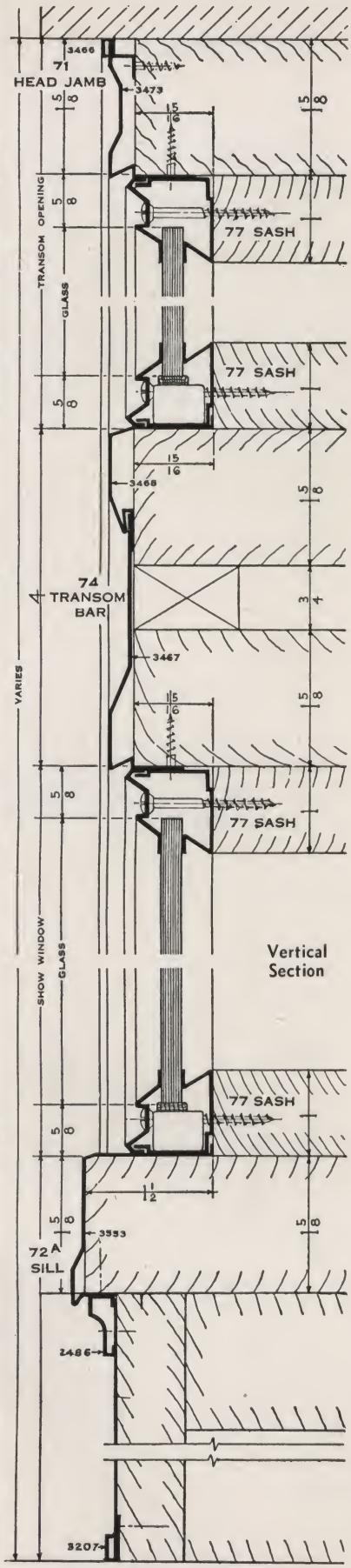
DETAILS OF NO. 77 SASH AND ACCOMPANYING CONSTRUCTION



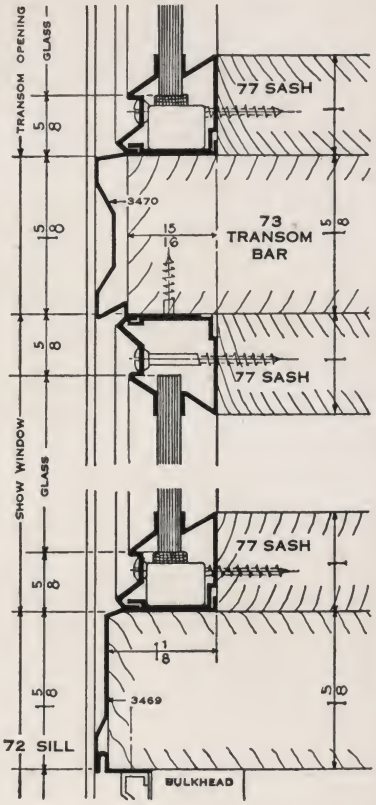
Full Size Section of No. 77 Sash

Patents and Copyright Applied For

THE Kawneer COMPANY
NILES, MICH.

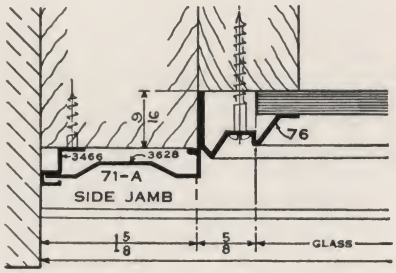


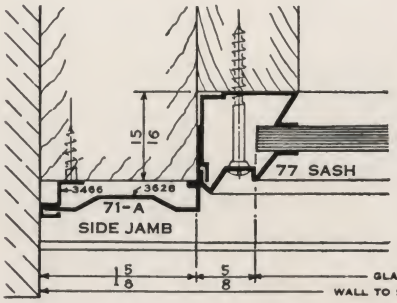
Vertical Section

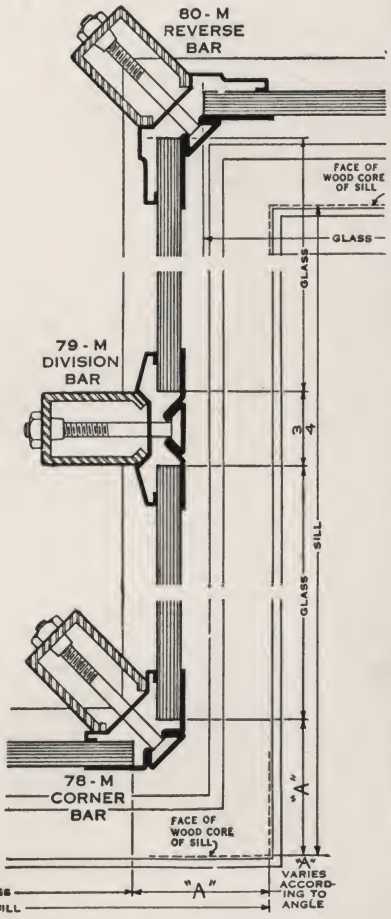


HALF SIZE DETAILS

Horizontal Section







THE ZOURI COMPANY

Manufacturers of Zouri Safety Key-set Store Front Construction

410 South Michigan Avenue
CHICAGO, ILLINOIS

INTERNATIONAL DISTRIBUTION

Products

Zouri Safety Key-set Store Front Construction available in:

Solid Bronze and Electrolytic Finishes.
Solid Aluminum.
Alumilited Aluminum (Anodic Oxide Coated).
Stainless Steel Alloys.
Also Entrance Doors, Sturdiweld Shower Stall Doors; Cast and Extruded Store Fronts.

Alumilited Aluminum

The Alumilite Process is an electro-chemical method of producing on an aluminum surface a uniformly hard and tenacious coating of aluminum oxide, which in hardness has a rating of 8½ to 9 on the Mohs scale of hardness. The natural hardness of this coating, together with the fact that it will not chip or flake, makes Alumilite an abrasion-resistant coating. Commercially prepared specimens have withstood the action of the salt spray test for several hundred hours without breaking down.

Description

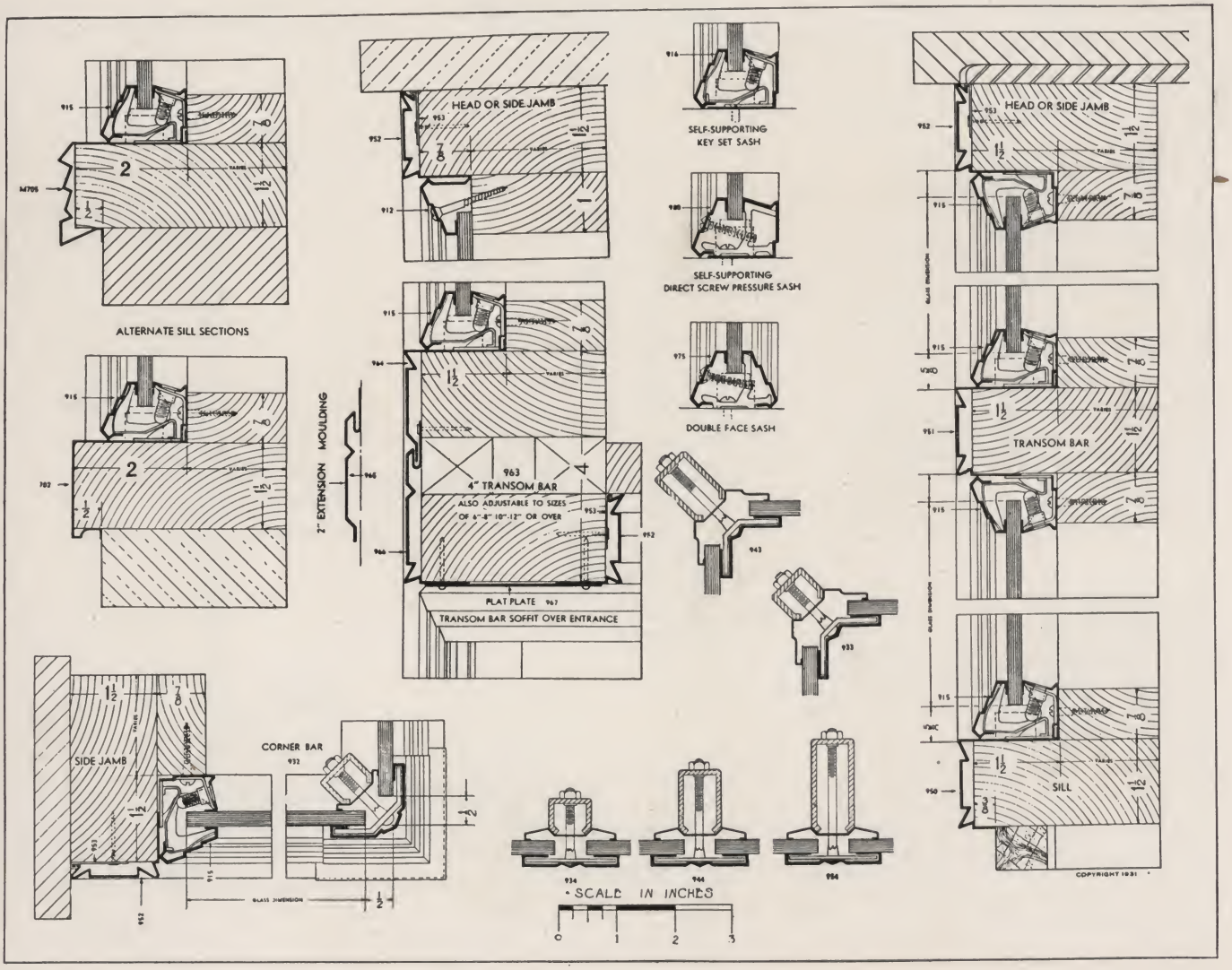
The Modernized Zouri Construction is installed without exposed nails and screws, thus harmonizing with the well-known Zouri Key-set sash. This highly desirable feature is enriched by acutely sharp lines and truly flat surfaces.

Zouri Dubl-Wate

This construction, partially illustrated on the following page, embodies all the desirable features of Modernized Zouri Construction and, in addition, is entirely fabricated from extra heavy gauged metal.

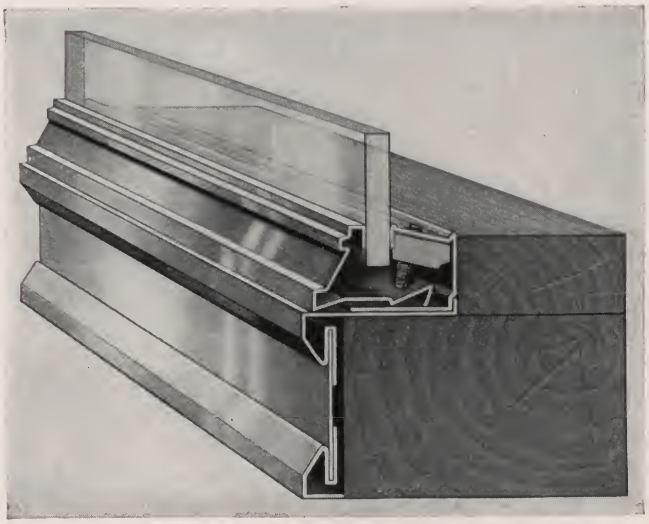
Service

File folders of full size detail sheets furnished on request. Our Architectural Department prepares special details for architects without obligation.

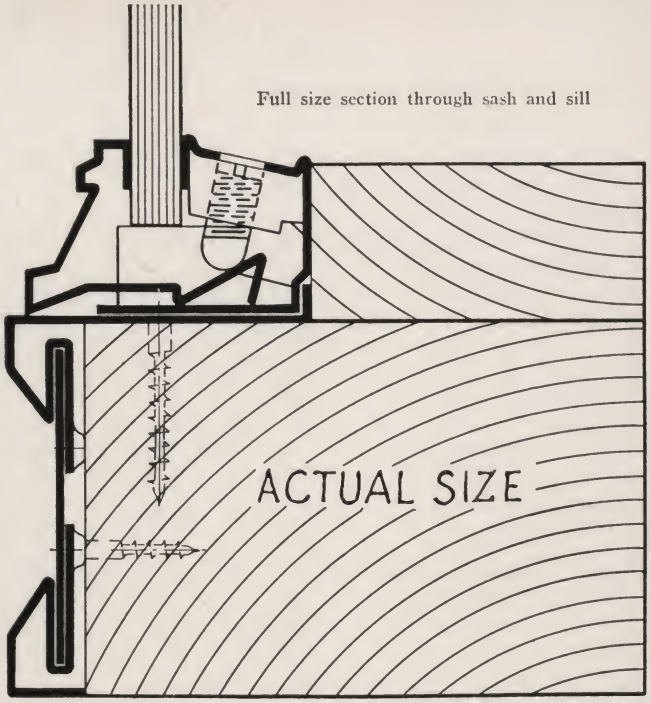


ZOURI DUBL-WATE STORE FRONT CONSTRUCTION

Its impressive appearance adds prestige to shop fronts.

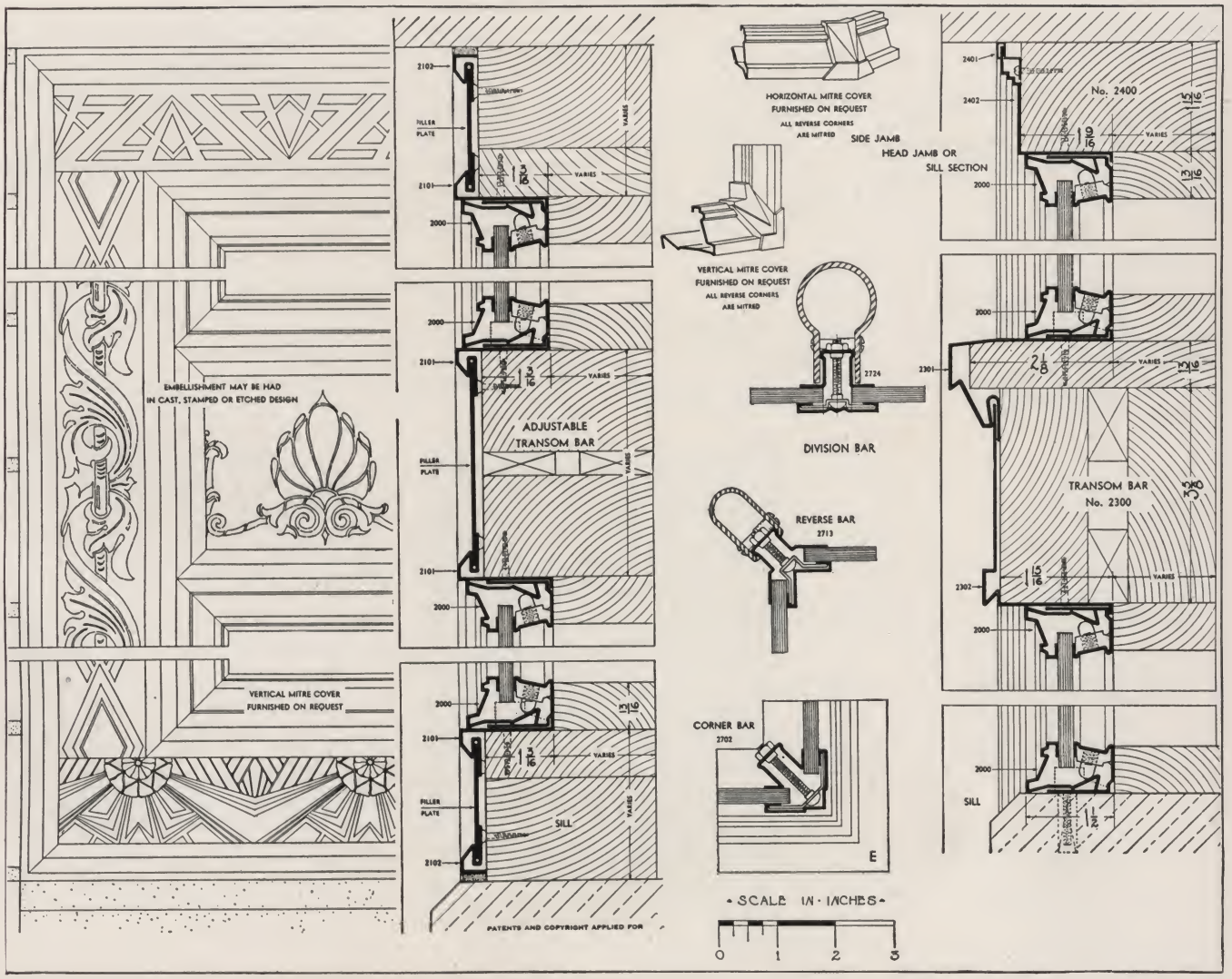


Full size section through sash and sill



Heavier Sections — Modern Shapes

Write for full size details



ESTABLISHED 1889

H. B. FRED KUHLS

Manufacturer of Kuhls' Elastic Glazing and Caulking Compositions

OFFICE AND FACTORY

6411-6423 Third Avenue, BROOKLYN, N. Y.

Products

ELASTIC GLAZING COMPOSITION — For glazing skylights, conservatories, bedding and glazing of glass in steel or sheet metal frames and all other glass construction work.

ELASTIC CAULKING COMPOSITION—For caulking between masonry of window and door frames of wood or steel.

For Kuhls' Elastic Waterproofing Composition, see Manufacturers' Index. On the same pages will be found a list of agents carrying stocks, and also architects who have specified Kuhls' Elastic Products.



Kuhls' Elastic Glazing and Caulking Compositions

They yield slightly to atmospheric conditions, yet always make a tight joint, and are not affected by vibration, heat, cold or moisture. Will not crack, peel or chip. Adhere strongly to wood, metal, glass, etc., bedding perfectly, and always making a tight joint.

The stock color of Kuhls' Elastic Glazing and Caulking Compositions is light gray. Any desired dark shade or color can be furnished at the same price as the stock color.

Kuhls' Elastic Glazing and Caulking Compositions are of such consistency as to be easily applied with a trowel, knife or gun.

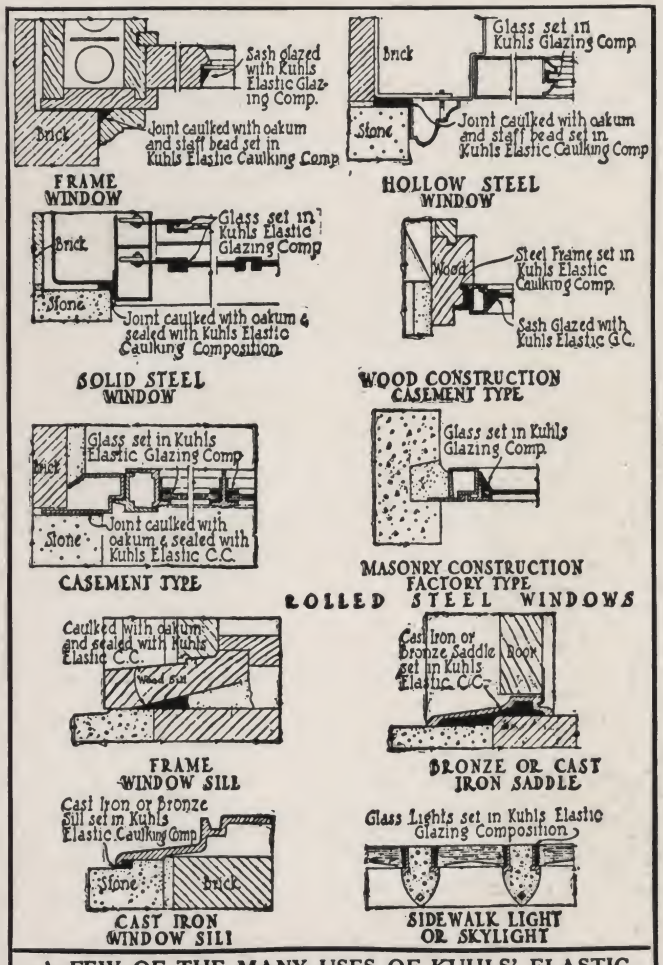
Put up in cans of 1, 2 and 5 lb.; in drums of 12½, 25, 50 and 100 lb.; in half-barrels of 100 to 500 lb.; and in barrels of 700 and 800 lb.

In the service of H. B. FRED KUHLS is a corps of experienced men, each trained in his respective line to co-operate in the fullest measure with architects, engineers and contractors. This efficient service in the use of Kuhls' Elastic Glazing Composition is without obligation.

Architects on the Pacific Coast are referred to the California Minwax Corporation, 1322 So. Los Angeles Street, Los Angeles, Cal., who have a staff of trained waterproofing engineers. They will gladly furnish information and samples gratis.

Glazing Composition—Kuhls' Elastic Glazing Composition for bedding and glazing sash, skylights, conservatories and glass construction in general is an ideal material. It is elastic and retains its elasticity indefinitely because it never sets hard or becomes brittle. This saves breakage of glass—especially important in the case of wire glass.

Its use is economical, as it is double the bulk of white lead putty, and retains its essential qualities indefinitely.



A FEW OF THE MANY USES OF KUHLS' ELASTIC GLAZING AND CAULKING COMPOSITIONS

Specifications for Kuhls' Elastic Glazing Composition

For Bedding and Setting Glass in Sash, Doors, Skylights, Conservatories, Marquises, etc.—Kuhls' Elastic Glazing Composition shall be used in the same way as ordinary putty in bedding and puttying glass. For wood sash and doors the wood shall first be primed; or, on old work, the wood sash and doors shall be scraped and painted before setting the glass. For metal or metal covered sash and doors, the glass shall be bedded in the glazing composition and then secured in place with metal clamps, sprigs or mouldings, or the composition smoothed off, depending on the construction.

General Specification (Under Glazing)—All glass, unless otherwise specified, required for sash and doors of metal, metal covered or wood, shall be bedded and set or puttied with Kuhls' Elastic Glazing Composition (manufactured by H. B. FRED KUHLS, Third Avenue and 65th Street, Brooklyn, N. Y.). It shall be secured either by clamps or metal or wood mouldings, sprigs, supplied by other contractors, or puttied as required.

The Elastic Glazing Composition shall be delivered at the job or factory, where glazing is to be done, and is not to be opened until after the inspection and approval of the architect.

Specifications for Kuhls' Elastic Caulking Composition

Caulking Exterior Wood Window and Door Frames—For new or old frames, the staff bead shall be removed and the joint between the frame and the masonry on all sides, jamb, head and sill, shall be completely filled with Kuhls' Elastic Caulking Composition so that it will project out beyond the masonry. The staff bead, when placed in position, shall be pressed into the Elastic Caulking Composition.

If the joints are wide and deep on old work, they shall be caulked with oakum to within ¾ in. of the surface; then the remainder of the joints shall be filled with Kuhls' Elastic Caulking Composition as for new work.

Caulking Steel or Metal Frames—When metal frames are set in masonry after opening has been built, the inside edge of the masonry opening or the frame shall be buttered with Kuhls' Elastic Caulking Composition and the frame pressed into place and secured.

Where frames are already set, Kuhls' Elastic Caulking Composition shall be used to thoroughly caulk between the frame and the masonry, at head, jamb and sill.

ESTABLISHED 1922

PLASTIC PRODUCTS COMPANY

Putties—Caulking Compounds

6475 Georgia Avenue, DETROIT, MICH.

BRANCH FACTORIES

CHICAGO, ILL., 3100 West 51st Street

JERSEY CITY, N. J., 42 Halladay Street

Plastoid (REGISTERED)

Time Tested Products

Putty and caulking compounds are a minute part of the cost of building construction. The actual material cost is small compared to the labor used in applying them, but dissatisfaction, annoyance and expense, if these materials do not prove satisfactory, can be large and out of proportion to their original installation cost. The first considerations therefore in their selection are dependability and reliability.

Plastic Products Company maintains three factories devoted to the manufacture of putties and caulking compounds. Its years of experience have embraced many of the country's largest and finest examples of the builder's art. By specifying Plastoid our long experience and extensive facilities may be utilized for the benefit of the architect's clients.

Steel Sash Putty

Plastoid Steel Sash Putty is a durable, easy-working putty for all types of factory and other interior glazed metal sash. Our special process of manufacture insures an easy glazing material which dries promptly with a non-greasy surface, adheres readily to glass and all metals, and will not sag or form oil pockets.

Metal Casement Putty

Experience has proven that a special faster-drying putty is necessary for use on metal sash which are glazed outside, such as residence and office types of casement sash. *Plastoid Metal Casement Putty* dries quickly with a hard smooth surface which can be painted without delay. It is formulated to withstand external weather conditions, keeping a waterproof bond and the surface appearance desirable in this type of work.

Monitor Putty

Plastoid Monitor Putty is for use on monitors where extreme weather conditions, excessive vibration and disturbance due to the moving action of the operating units make it particularly difficult to keep putty from leaking and breaking away.

Glazing Compound

Plastoid Glazing Compound is recommended where a glazing material is required which will remain permanently plastic. It will not be affected by extremes of heat, cold or vibration; does not get hard but remains tough and rubbery. This is the best possible material to use on expensive sash, such as bronze or aluminum, where cost is not a factor but appearance and durability are the prime objects.



Waldorf-Astoria Hotel, New York
Schultze & Weaver, Architects
Thompson-Starrett Co., Builders
Glazed by Joseph Elias & Co.

Wood Sash Putty

Plastic Products Company manufactures all grades of wood sash putty to comply with various State, Federal, and Architect's specifications.

Our *Plastoid Pure Linseed Oil Putty* is a 100% linseed oil material and may be obtained with any desired percentage of the base white lead. The imported, soft amorphous chalk whiting used, absorbs oil readily and permanently, producing a velvety texture and a smooth easily painted surface.

Acid Resisting Putty

Plastoid Acid Resisting Putty can be used to advantage in acid and alkali plants, laundries, boiler rooms, or other places where fumes or excessive condensation attack ordinary putties.

The inert materials used in this product provide a putty that has proven exceptionally satisfactory in this difficult class of work.

Greenhouse—Sludge Bed Enclosure Putty

Plastoid Greenhouse Putty is designed primarily for greenhouse or sludge bed enclosure glazing. It may be obtained in either knife or gun consistency. This material forms a tough surface skin underneath which it remains permanently elastic.

Caulking Compounds

Plastoid Caulking Compound is supplied in both knife and gun grades and in all colors. It adheres tenaciously and permanently, without staining, to all types of building materials. It will not crack, wrinkle, sag or dry out, and will adjust itself to ordinary warping, expansion and contraction.

Painting of Putty

Proper painting is extremely important in the use of putty. For long satisfactory service putty should be kept painted in the same manner as wood, metal or other materials. Painting renews the life of putty, and protects it from the elements.

A good putty, painted after it is well set and kept properly painted lasts indefinitely.

In fact, inferior putty kept well painted frequently gives more lasting service than a very good material not protected.

The Plastoid Guarantee

The Plastic Products Company guarantees its materials to give satisfaction when properly applied under circumstances for which they are designed and kept properly painted.

THE TREMCO MANUFACTURING CO.

Caulking, Pointing, Glazing Plastics, Mastic Flooring, Waterproofings and Paints

393 East 131st Street, CLEVELAND, OHIO

REPRESENTATIVES IN PRINCIPAL CITIES

CANADA: The Tremco Manufacturing Co. (Canada) Limited, LEASIDE (TORONTO), ONT.

TREMCO

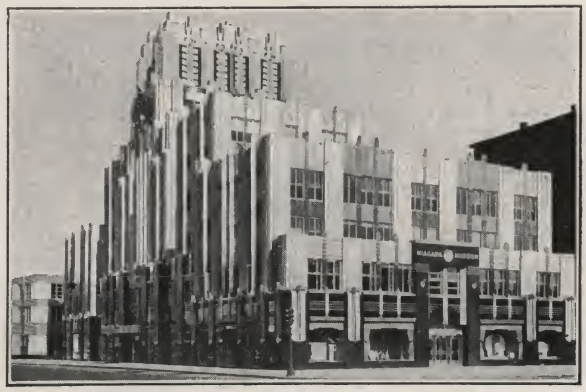
Tremco Elastic Glazing Compound

A cushionlike, non-hardening, tenacious material easily handled by professional glaziers, weatherproof and waterproof, takes up expansion and contraction, absorbs vibration, unaffected by moisture, gases, acids, etc., made in 6 colors, for wood or steel sash.

Glazing Specifications—Write for detailed specifications.

Wood Sash—Bed all glass in Tremco Glazing Compound as manufactured by THE TREMCO MANUFACTURING Co., and delivered on the job in the original sealed containers. Set all glass with glazier's points and bed and face putty with Tremco Glazing Compound.

Metal Sash—All glass in metal sash shall be bedded, held in place with spring glazing clips and face glazed with Tremco Glazing Compound, special consistency for steel sash glazing, as manufactured by THE TREMCO MANUFACTURING Co.



Niagara Hudson Building, Syracuse, N. Y.
Glazed with Tremco Glazing Compound

Tremco Stainless Caulking and Pointing Compound

A non-staining plastic compound which will never become brittle or crack. Adheres tightly to wood, metal or masonry, forming a weatherproof, waterproof joint. Stock colors are gray, chocolate brown, stone, red and green. Special colors also manufactured.

Two consistencies—one for use with a caulking gun and the other for application with a caulking or pointing tool.

Approved Caulking Contractors are located in the principal cities of the United States and Canada.

Caulking Specifications—Write for detailed specifications.

Preparation—All cleaning or pointing of the building exterior shall be completed, and interior window and door trim shall be set, before caulking is begun.

Application—All caulking, including caulking of the sills, shall be done on the exterior side of the building wall.

All joints around all window and door frames shall be caulked in such a manner as will make them airtight and watertight, with Tremco Caulking and Pointing Compound as manufactured by THE TREMCO MANUFACTURING Co.

The spaces between the masonry, and the outside of frames, around jambs, head and sill shall be filled completely with Tremco Caulking Compound, forcing the compound into the opening with the Tremco Hand Caulking Gun, and making a neat, smooth bead, one edge flush with the frame, the other edge flush against the masonry, and not extending more than ¼ in. out beyond the face of the frame.

Note: Approved Caulking Contractors are located in principal cities of the United States and Canada.

Pointing Specifications—Write for detailed specifications.

The mason contractor will rake out joints to a depth of ¾ in. and width of ½ in. in all features. Before applying Tremco Pointing Compound clean joints thoroughly, then fill these joints with Tremco Pointing Compound, manufactured by THE TREMCO MANUFACTURING Co. Force as much Tremco Pointing Compound as possible into spaces in such a manner as will make them weathertight, and finish off neatly and smoothly flush with the masonry.



Pennsylvania R. R. Station, Philadelphia, Pa.
All copings and projecting stone work pointed with Tremco Caulking and Pointing Compound

Tremco 141 Invisible Dampproofing

A positive dampproofing for exposed masonry surfaces above grade; will not materially change color or texture of surface treated.

Transparent Dampproofing Specifications—Write for detailed specifications.

Preparation—Surface shall be clean and absolutely dry. Application should not be made at temperatures below 45° F.

Application—Surfaces to be treated shall be thoroughly pointed before application of Tremco Transparent Dampproofing. All loose mortar joints shall be removed and repointed; all holes and cracks filled; all coping joints pointed; and all window and door frames caulked with Tremco Caulking and Pointing Compound. Tremco Transparent Dampproofing may then be applied in two heavy coats with a brush or spray, allowing the first coat to dry before applying the final coat.

Tremco Mulsomastic Flooring

A cold-applied, heavy duty mastic floor, waterproof, dustless, resilient, quiet, light in weight, only ½-in. thickness, low in cost, long lived under severe trucking conditions, for interior or exterior use over a base of concrete, wood or brick. Especially suited for trucking aisles or entire floors in industrial plants; for urinals, shower rooms, gymnasium floors; for corridors in schools and public buildings, or as a base for asphalt tile flooring. Recommended for freight loading platforms, cooling tower decks, stair treads and waterproof driveways and sidewalks.

Flooring Specifications—Write for complete detailed specifications. Surface shall be a Mulsomastic Floor applied with Tremco Mulsomastic in accordance with the specifications of THE TREMCO MANUFACTURING Co. The material to be delivered on the job in original sealed containers.



J. R. Booth, Ltd., Ottawa, Ont.
15,000 sq. ft. of Mulsomastic Flooring

Tremco Architectural Catalogue

We will be pleased to furnish upon request, the Tremco Architectural Catalogue, containing complete specifications for the proper application of all types of waterproofings and paints, among which are:

Aquanox 101—For bedding stone sills and coping stones.

Tremco 202—The positive plaster bond for smooth concrete ceilings.

Cretemix A—Concrete accelator and anti-freeze.

Cretemix B—Integral waterproofing paste.

Tremco 112 Foundation Coating—For exterior walls below grade.

Tremco 111 Plaster Bond Dampproofing—For interior of all exterior walls prior to plastering.

Penetrem—A preservative and decorative coating that stands heavy foot traffic. For wood, concrete or linoleum floors.

Kemi-Kote—Chemical floor hardener.

Mulsomastic—Heavy duty flooring, light in weight, waterproof; dustproof, resilient, withstands heavy trucking.

SEMON BACHE & COMPANY

TELEPHONE
WAlker 5-4140

"Dependable Glass Products Since 1847"

Greenwich and Morton Streets NEW YORK, N. Y.

EVALAST PROCESS PERMANENTLY BRILLIANT MIRRORS

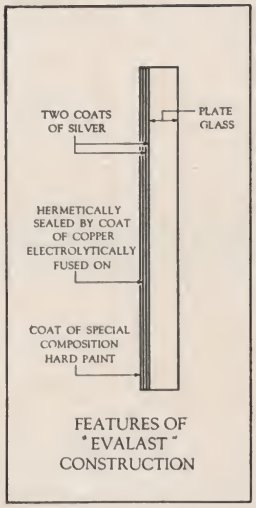
Mirrors are equipment which are constantly scrutinized. They are usually good reflectors when installed but soon become unsightly from dampness, condensation, fumes and other adverse conditions unless special processes have been employed in their manufacture to protect the silver.

GUARANTEED
EVALAST
Registered Trade-Mark
MIRRORS
SILVER WILL NOT SPOIL

Why Evalast Mirrors Can Be Guaranteed

Evalast Mirrors are made with two coats of silver applied to properly processed glass. The silver film is hermetically sealed by a heavy uniform coating of copper *fused to the silver electrically*—no copper *paint* or metallic pigments in a binder is used.

The copper back is electroplated. This is why Evalast Mirrors withstand even direct contact with steam or water. This is why they can be, and are, guaranteed against silver oxidation.



FEATURES OF "EVALAST" CONSTRUCTION

Evalast Mirrors Are Moderate in Cost

Despite the extra processes employed in their manufacture and the fact that only the highest quality of materials are used, Evalast Mirrors are moderate in cost, comparable with the ordinary type mirror and offer, further, the economy of permanence which makes them far the cheapest in the end.

Tested and Approved by U. S. Navy and Army

Evalast Mirrors have proved their permanent brilliance in damp climates and marine work. They have been tested and approved by the U. S. Navy and Army. They are particularly valuable for seashore hotels and residences, bathrooms, lavatories, washrooms, beauty parlors, barber shops, store fixtures, etc.

Made in All Sizes and in Colors

Evalast Mirrors are made in all sizes from the smallest bathroom mirror to the largest sizes required for store fixtures.

Evalast Mirrors are made in standard plate glass, "Aquaplate" (colorless plate) and colored plate glass. Also gold mirrors. "Aquaplate" Evalast Mirrors are made of colorless optical plate glass giving clear reflection without loss of color values. The various colored plate glass mirrors afford a wide range for decorative schemes, especially when used with colored or other ornamental treatments.



Plate No. 1—Old Process Mirror

Comparison of Old Process Mirrors and Evalast Mirrors

The illustration at the right and left are from *actual* photographs *unretouched* of specimens of mirror plates which were submerged constantly in water for over eight months except for occasional inspection.

Plate No. 1—Shows the streaks, spots, peeling, cloudiness, discoloration typical of mirrors silvered by the usual standard process.

Plate No. 2—Shows better than word description can, the resistance to deterioration and the permanent brilliant reflection guaranteed by installing Evalast Mirrors.



Plate No. 2—Evalast Mirror

Samples of any of our products furnished to architects on request

Architect's Specifications

All mirrors shall be ..... quality as defined in United States Bureau of Standards Commercial Standard CS 27-30* for plate glass mirrors. All to be commercial ¼ in. thickness excepting where otherwise specified.

All mirrors shall be manufactured with two coats of silver applied to properly processed glass. The silver film shall be hermetically sealed by a heavy uniform coating of copper fused to the silver electrolytically and finished with an exterior coat of special composition hard paint.

The protective copper back must be electroplated.

All mirrors shall be Evalast process mirrors as supplied by Semon Bache & Co., 636 Greenwich Street, New York, N. Y., or equal.

All mirrors must be guaranteed against silver oxidation and must have manufacturer's label on face and identification stamp on back of each mirror.

*We will be glad to furnish to architects a copy of the United States Bureau of Standards Commercial Standard CS 27-30 giving standard gradings for plate glass mirrors.

HARDWARE ROUGH AND FINISHED AND SPECIALTIES

THE CASEMENT HARDWARE CO.

Improved Hardware for Operating Out-swung Casement Windows

406 North Wood Street, CHICAGO, ILL.

BRANCHES

NEW YORK, N. Y., 101 Park Avenue — BOSTON, MASS., 161 Summer Street

EXHIBIT: Architects Samples Corporation, NEW YORK, N. Y.

Products

Win-Dor

TRADE-MARK

Exclusively Operating and Locking Devices specialized for *out-swung* casement and transom windows—steel and wood.

THROUGH-SCREEN (UNDER-SCREEN) CASEMENT OPERATORS: Worm Gear (Series 25 and 26), and Direct Acting Types (Series 7 and 24) for surface, flush or concealed installation. These devices control the casements entirely from inside of any type of insect screen.

OPERATOR and SCREEN UNITS for standard steel casements —Series 80 and 80A.

OPERATOR and SCREEN COMBINATION (Integral Attachment) —Series 50.

CASEMENT STAYS — Self-locking, Positive ("Sliding"), Series 61.

TRANSOM OPERATORS, THROUGH-SCREEN and NON-SCREEN TYPES, for top hung windows.

CLEANING HINGES for wood casements—Series 70.

CONCEALED CASEMENT OPERATOR—Series 35.

Win-Dor Casement Hardware

Advantages, General—A *complete line,* gradually developed from intensive specialization on out-swinging casement problems, offering a solution appropriate to every construction and type of building.

Security—Positive, self-locking principle eliminates damage through carelessness of users, as well as from winds. This and other security features eliminate dangers to users and remove liabilities from building owners.

Convenience—Quick, simple action with reserve power makes casement operation of Win-Dor devices easy and natural for women.

Durability—Win-Dor devices are designed and tested to stand not only use, but abuse, under extreme operating conditions. Many Win-Dor installations are in good service after ten to fifteen years with no, or very minor, replacements.

Materials and Finishes—All steel or iron parts are furnished in rustproofed finishes only (cadmium or Parkerized). All devices also made in solid brass in all trade finishes.

Specialized Application—Win-Dor operators and stays are the only specialized or patent devices co-ordinated to the standard practice of steel casement manufacture and attachment. (See notes on final page.) They are equally advanced in their application to all desirable wood casement details.

Availability and Plant Capacity

Distributed for steel casements through leading steel window manufacturers with warehouse stocks and branches throughout the United States. For wood and steel casements, stock and samples are available from over one thousand leading builders' hardware merchants. Display in permanent exhibit, Architects Samples Corporation, New York, N. Y.

Win-Dor products are manufactured in a modern daylight plant with capacity of over one million units per year.

Development and Research

A special department, staffed by experienced architectural engineers, constantly testing, designing and improving.

Architectural Service

An experienced department freely available for advice on casement screening and operating problems.

Technical Analysis of Duty and Safety Factors for Out-swung Casement Hardware

A brief analysis of these characteristics will give a sound basis for determining satisfactory solutions.

(1) Wind Pressures as Related to Friction and Positive Holding Means—Obviously, out-swung casement leaves are subjected to the full force of wind pressures, from which inward opening sash are generally protected. Friction devices may be set for the latter at very low resistance, convenient to operate, yet sufficient for the duty. Out-opening vents are subject to the full force of the wind, which may be calculated as per wind pressure table from formula $P=0033x(V)^2xA$. A friction resistance of 16 to 20 lb. (at center of swing leaf) is the limit which may be operated with reasonable convenience. It, therefore, appears that maximum friction will hold in average but not in all wind velocities to be occasionally expected. Win-Dor Positive Operators and Stays, as shown on succeeding pages, are designed specifically for such duty, and when locked will hold any practical size casement without injury to such casement or itself, plus a large factor of safety. When operated, there is no resistance to work against and no racking strain on the casements.

WIND PRESSURE ON OUT-SWUNG CASEMENTS

Mi. per hr.	Wind pressure, lb. 6-light, 4.5 sq. ft.	8-light, 6 sq. ft.
15	3.34	4.46
20	5.94	7.92
25	9.28	12.38
30	13.37	17.82
35	18.19	24.26
40	23.76	31.68
50	37.13	49.50
60	53.46	71.28

Note: For any constant velocity, puffy wind conditions and vacuums will cause much greater temporary pressures. Hence, *occasional* severe strains at moderate *average* wind velocities.

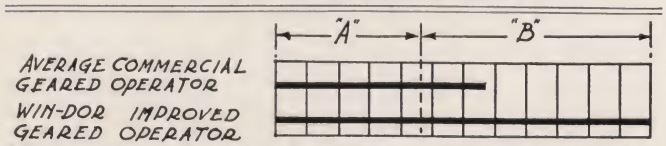
(2) The Human Element as Related to Holding Means—The characteristic holding duty may be theoretically met by any positive means of sufficient strength—as thumb screw adjusters or peg and stay. Such devices depend upon the intelligence and carefulness of the operator always to manually secure the casement when left open.

Negligence in this matter is common in private houses and flagrant in apartments, hotels and institutions. All Win-Dor devices are, therefore, automatically self-locking. Flung to any position the positive lock will take hold at the slightest movement of the sash.

(3) The Human Element as Related to Strength and Safety Factors—Given a device (such as a geared operator), both positive and self-locking, proper design involves meeting not only probable wind pressures, but all conditions of actual use. This involves inevitable occasional abuse:

(A) Leaving casements open in exceptional winds.
(B) Abuse of workmen on building.
(C) Abuse by servants, transients, or other careless users.
(D) Attempts of intruders to jimmy or force sash.

TESTS MADE TO DETERMINE AVERAGE NORMAL WORKING RANGE AND FACTOR OF SAFETY FOR ROUGH USAGE



"A"- DENOTES AVERAGE RANGE OF DUTY WITH NORMAL USE
"B"- -"- -"- FACTOR OF SAFETY FOR ROUGH USAGE

The standards for Win-Dor strength and safety factors are set to meet these practical usage factors in all cases—and all Win-Dor devices are guaranteed adequate to every reasonable duty. The data for these standards obviously are obtainable only from wide experience; in the case of Win-Dor, twenty-five years of constant improvement, from actual observation.

(4) Weather Exposure as Related to Holding Means—Out-swung casement holders are exposed to a variety of weather conditions which successful products must meet, if they are to endure. All Win-Dor operators and stays use bronze or brass, regardless of cost or competitive prices, wherever experience and tests indicate that corrosion or wear may seriously affect operation. The least expensive Win-Dor units may, therefore, be used with assurance not only in dry localities but in salt-air, sea-coast exposures, etc.

(5) Convenience and Security of Operative as Related to Operating Means—The locking handle itself cannot always provide convenient or even safe means of swinging an out-open casement, as at full opening, 90 degrees, it will be from 2½ to 4 ft. from the operator—or inside wall.

Win-Dor Stays reduce the operating reach 12 ins.

Win-Dor Under-screen Operators eliminate it entirely.

Win-Dor Geared Casement Operators, Series 25 and 26

General—Win-Dor geared operators are not only sturdy and practical controlling mechanisms, but are so refined in design that they rank as first grade finish hardware, and can be used anywhere for surface installation. Their fine appearance makes concealment unnecessary, though such application can be readily made where desired.

Where Recommended—For all out-swung casements of wood or steel which are to be screened.

Important Features—Bronze worm makes bearings self-cleaning and insures permanent easy working even under salt air exposure. All other moving parts also have bronze bushings and washers. Series 26 Win-Dor operators are reversible to right or left hand installation.

Quick Action—Only four turns of crank required for full 90 degree opening.

No Back Slip—Patent brake on worm prevents slipping.

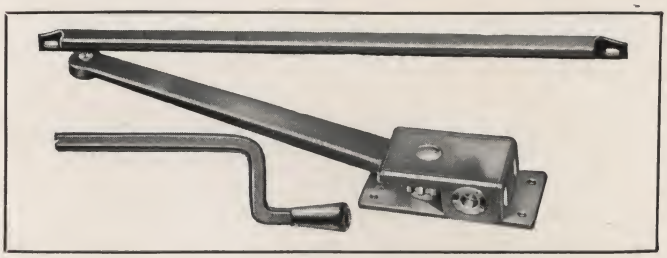
Quietness—Careful manufacture, assembly and inspection produce close-fitting parts free from excessive play.

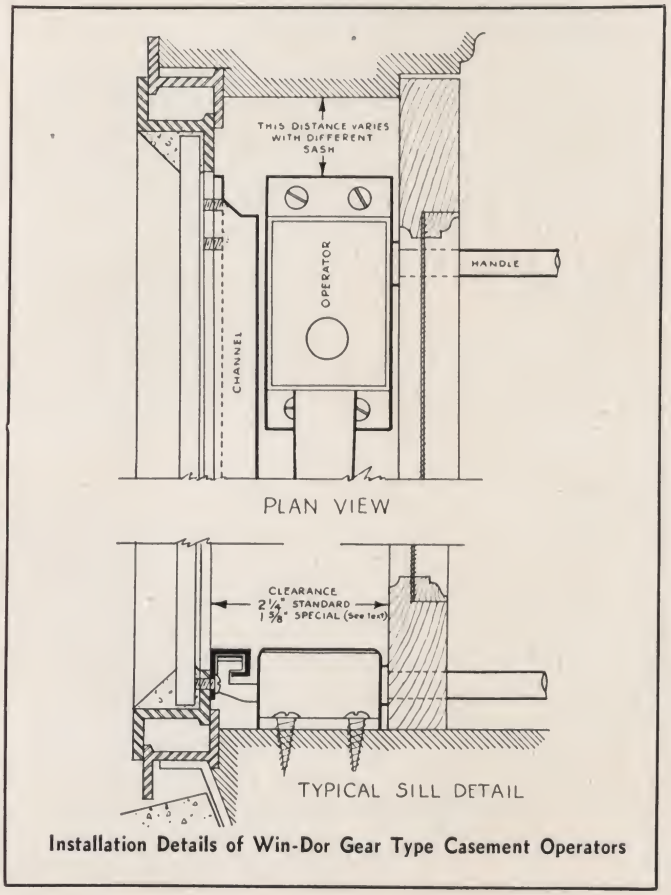
Bronze take-up spring on sliding connection also prevents rattling.

Standardized Application—These operators fit any stool with minimum of 2¼ in. between sash and screen (with wood casements this space may be reduced to 1⅝ in.).

Strength—See test chart preceding page.

Steel Casement Application—Most leading manufacturers of steel casements furnish stock casements, drilled and tapped for Win-Dor operators, or are prepared to furnish sash accordingly on order without extra cost. Series 25 and 26 operators fit same holes as Win-Dor Series 61 Stays.





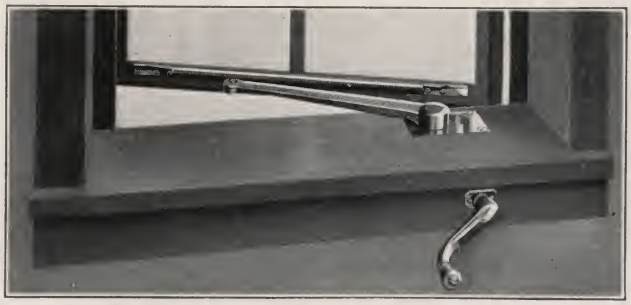
Installation Details of Win-Dor Gear Type Casement Operators

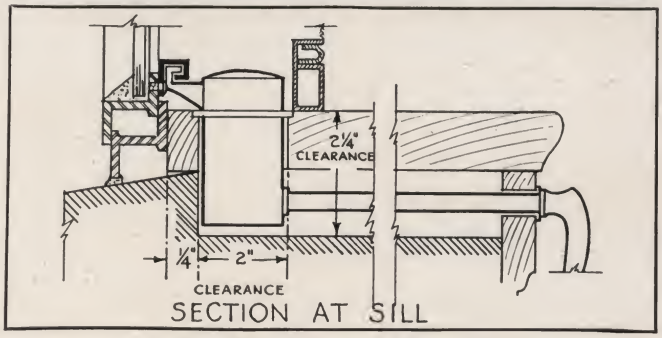
Win-Dor Concealed Operator, Series 35

Where Recommended—An unusually fine piece of finish hardware for wood or steel casements. Eliminates surface application of crank handle over stool.

Construction—Compact, sturdy gear housing with Win-Dor bronze worm. Handsome surface pivot and arm. Bronze ornamental detachable crank handle.

Advantages—Any type of screen may be used without cutting frame and without interference. This operator is immediately accessible and overcomes the objection of concealed sub-stool installations, as mechanism may be entirely removed without affecting window trim.



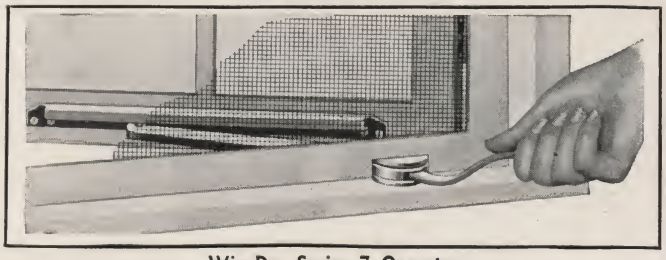


Win-Dor Operator, Series 7

A direct acting operator. Not geared.

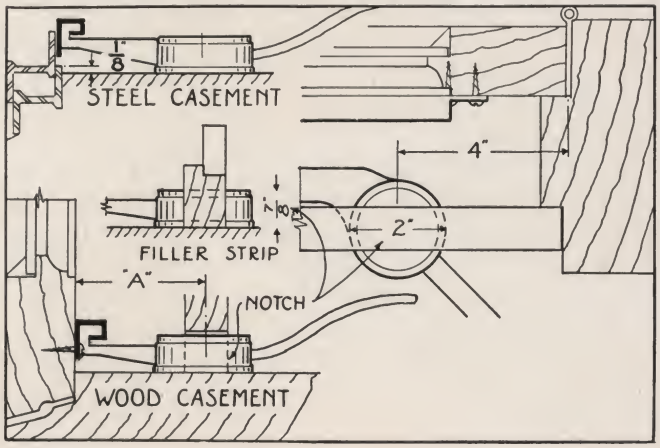
Where Recommended—For wood casements having ordinary butt hinges, particularly in private houses.

Operation—A slight downward pressure on handle releases the automatic lock and permits a swing of 90 degrees with positive locking at 8 points. Handles detachable or permanently attached, as desired. Right and left handed. Steel or brass.



Win-Dor Series 7 Operator

Shown in use with ordinary wood (out-swung) casements. Note the appli-cation of operator in relation to sash and particularly to screen



Win-Dor Operator and Screen Unit, Series 80 and 80A

The Win-Dor standardized casement operator and screen unit consists of Series 26 worm and gear type operator, concealed by a metal stool cover, and flat type screen, as furnished by THE CASEMENT HARDWARE CO., of Chicago.

Important Features—***Worm-gear Operation***—The finest type of Win-Dor through-screen operators, as described on preceding page.

Quality Screens Standardized—The finest quality metal frame screens. Made in standard sizes and on an economical production basis.

Ventilators Only Screened—No unwieldy screens over fixed lights.

Easily Attached and Detached—For washing windows, or storage, the screens need not be maneuvered to clear any hardware as this is contained in metal stool.

Detail Specification Data—***Screen***—A first quality top hung metal frame screen—provided with concealed pivot brackets—consisting of a heavy gauge steel frame strongly reinforced at corners, galvanized inside and out, and painted; together with the highest grade 16-mesh solid bronze wire in antique finish.

Operating Hardware—Win-Dor Series 26, reversible worm and gear type operator, provided with a solid bronze worm and bronze bushed gear, accurately machined and housed in an attractive drawn metal housing; parts of steel rust-proofed by means of parkerizing. No. 251 Handle. Special Win-Dor extruded section—easily fitted to all stool widths.

Metal Stool—A deep drawn metal stool of standard sizes to house casement operator. Made of 16 gauge copper steel, parkerized, and in addition painted on both sides. Provided with an upstanding lip for screen contact. Made reversible.

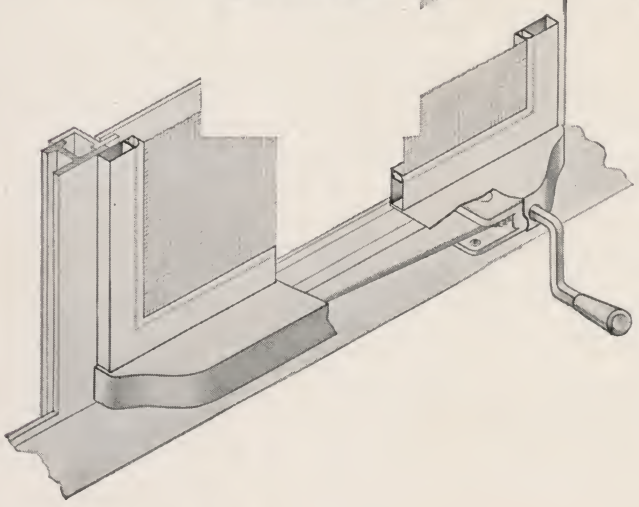
Locking Handles—Cast, flat type, locking handles of iron or bronze, provided with suitable brackets for convenient attachment, using standard drilling and tapping.

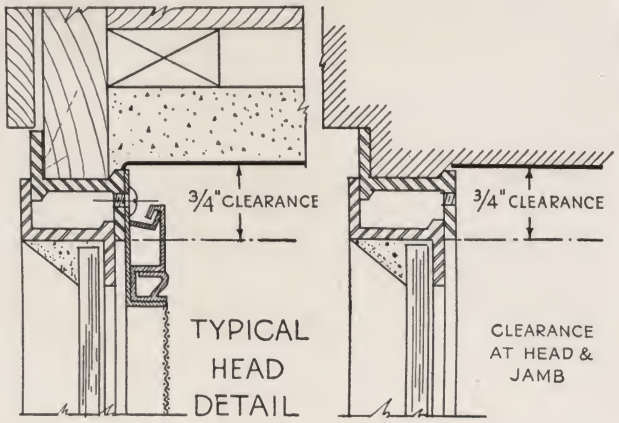
Note: Win-Dor combination operator and screen unit is adaptable to casement units of all standard makes.

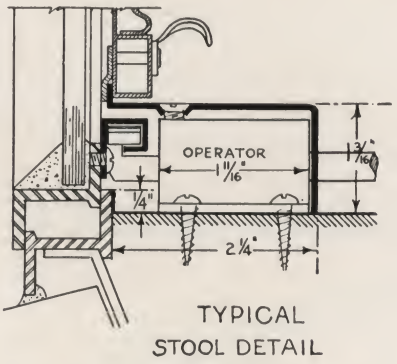
Recent Improvements—Screen latches are of improved tight-wedging cam-action type. Two latches instead of one on all four-light wide screens. Increased contact margins of screens, head and stool. Gauge manufacture of metal stools to permit template installation.



Showing Typical Relation of Casement Head and Jamb with Screen



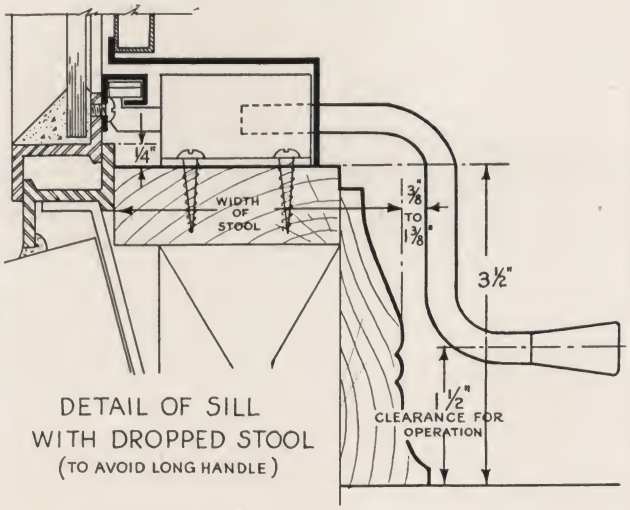




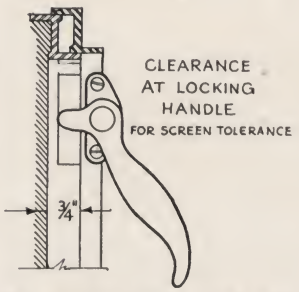
TYPICAL STOOL DETAIL

Note: Clearance at sill to be ¼ in. on both Series 80 and 80-A units.

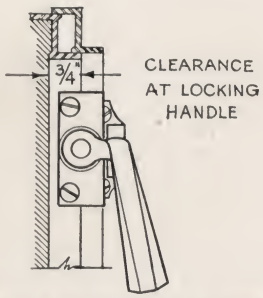
Note: Make sure of clearance at head, jamb and stool.



DETAIL OF SILL WITH DROPPED STOOL (TO AVOID LONG HANDLE)



Flat Locking Handle Used with Win-Dor Series 80 Operator and Screen Unit



Through-screen Locking Handle Used with Series 80-A Operator and Screen Unit

Win-Dor Operator and Screen Unit, Series 50

This Win-Dor combination comprises a new direct acting concealed operator and cover integrally attached and flat type screen as furnished by THE CASEMENT HARDWARE CO., Chicago.

Important Features—***Integral Attachment***—The whole installation being attached direct to the steel frame offers many advantages.

Through-screen Operator and Through-screen Lock and Handle—Casement control is entirely from within, making the window opening absolutely insect-proof, yet instantly adjustable for ventilation.

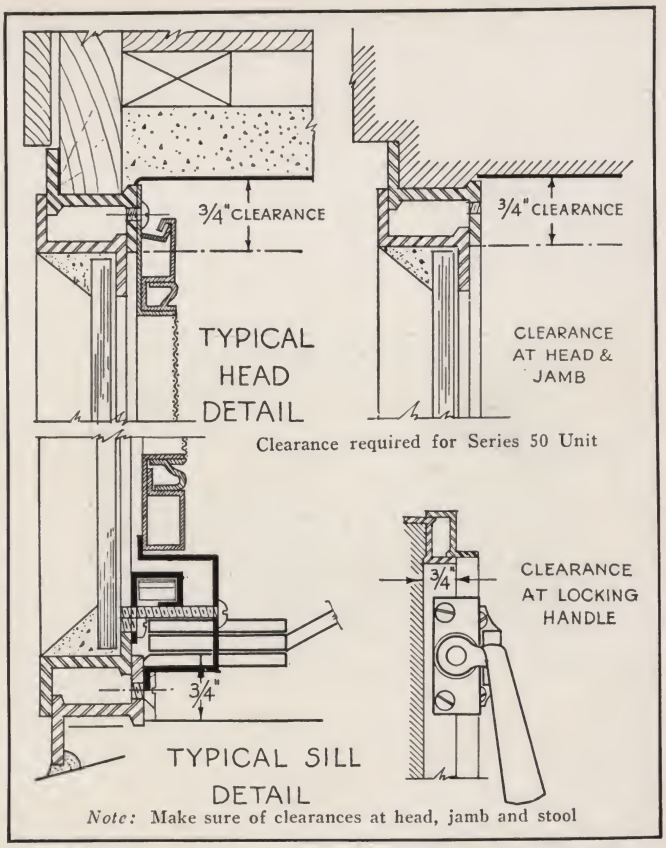
Automatic Locking and Positive Control—Over a period of years this principle of casement control has provided economy and utmost convenience in casement window operation.

Detail Specification Data—***Screen***—The metal frame flat screens for the Series 50 unit are made by several of the oldest and best known screen factories, insuring users of the highest quality and workmanship. Standard screens as listed are first quality Higgin, Watson, or equal, with bronze wire cloth antique finish No. 16 mesh. Metal frames have a two-coat baked finish. Screens are simply and *instantly* detachable.

Operating Hardware—The direct acting operator features the patented Win-Dor principle of positive automatic sash control. This is the type of operator used in New York on several of the largest steel casement installations ever built where it has proven eminently successful.

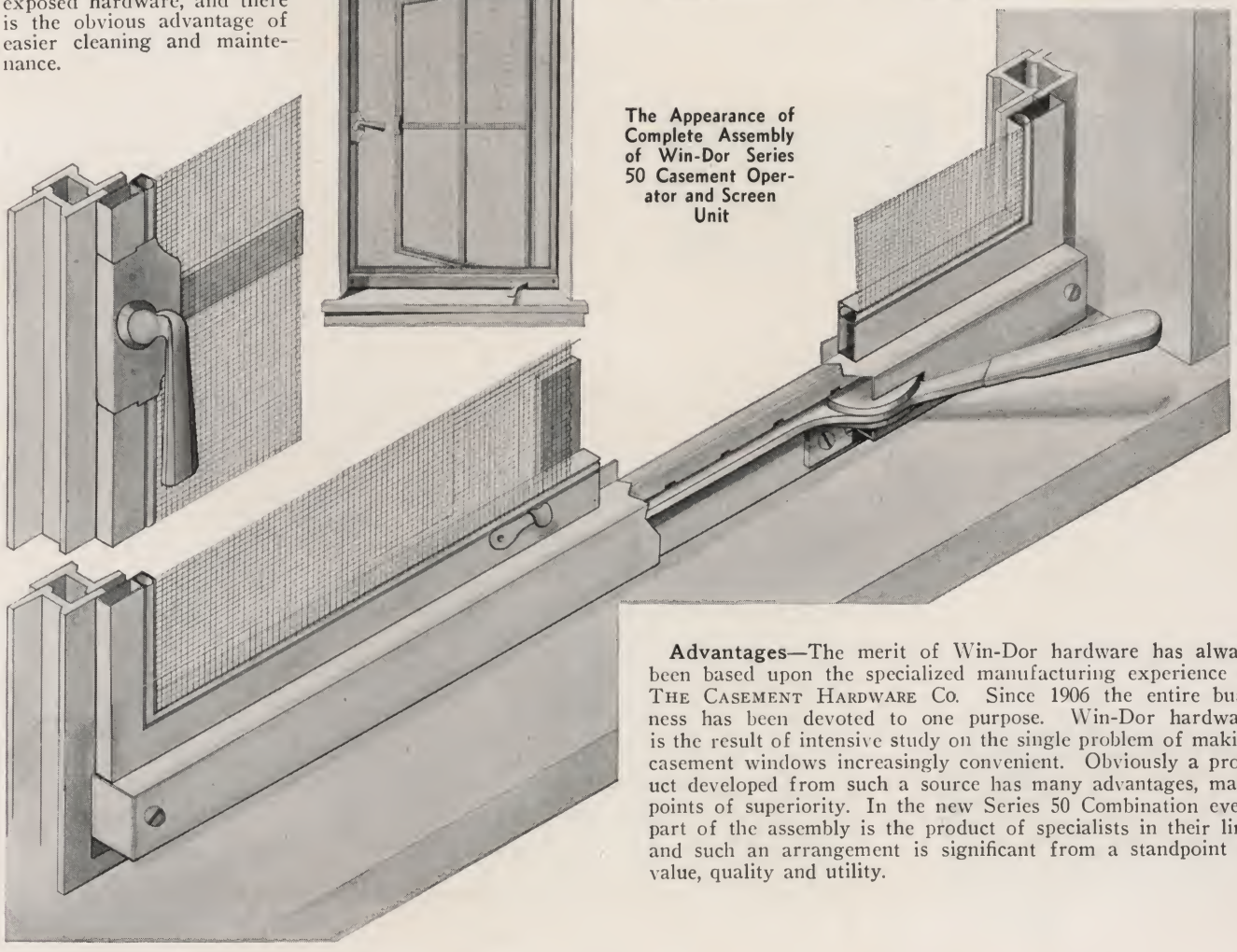
Lock and Handle—This simple, sturdy and well designed hardware is of the cam action type with lock fastened to the sash frame and with removable handle which works through the screen frame as illustrated.

Operator Cover—This neat metal formed cover attaches direct to the casement frame, making wood stools unnecessary. The compact design requires a projection of only ½-in. inside the screen. The appearance is thus one of attractive simplicity, far more acceptable than exposed hardware, and there is the obvious advantage of easier cleaning and maintenance.



Clearance required for Series 50 Unit

Note: Make sure of clearances at head, jamb and stool



The Appearance of Complete Assembly of Win-Dor Series 50 Casement Operator and Screen Unit

Advantages—The merit of Win-Dor hardware has always been based upon the specialized manufacturing experience of THE CASEMENT HARDWARE CO. Since 1906 the entire business has been devoted to one purpose. Win-Dor hardware is the result of intensive study on the single problem of making casement windows increasingly convenient. Obviously a product developed from such a source has many advantages, many points of superiority. In the new Series 50 Combination every part of the assembly is the product of specialists in their line, and such an arrangement is significant from a standpoint of value, quality and utility.

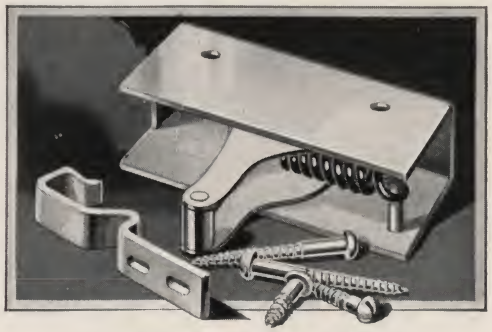
Win-Dor Series 45 Top Closer

Where Recommended—Essentially designed for out-swung wood or steel casement windows controlled with gear type operators. The Series 45 is equally efficient for use on in-swung sash, hinged transoms, screen doors and for many other purposes where tight tension contact is required.

Operation—Mechanically simple and completely automatic. Strong enough to overcome warping. Has a pull of 8 lbs. Right or left-hand installation. No mortising.

Construction—Entire closer is contained in a neat smoothly finished metal housing size 3½x1½x1 in.

Finish—Rustproof cadmium, Parkerized or solid brass.

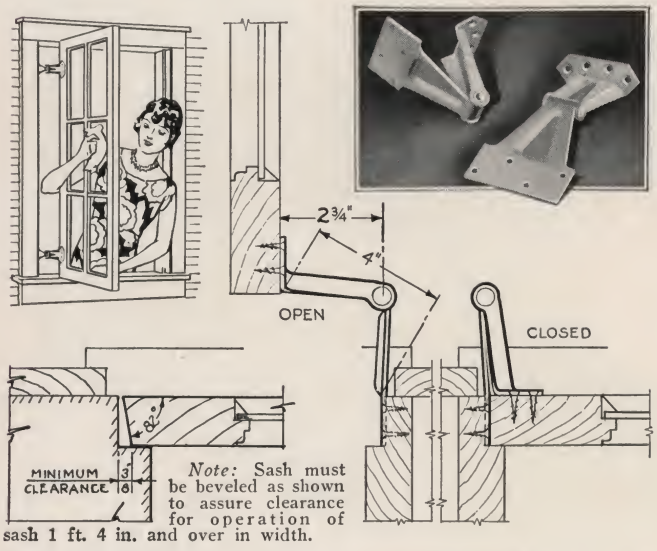


Win-Dor Series 45 Top Closer

Win-Dor Cleaning Hinge, Series 70

Gives to wood casements the same type of projected swing that is general practice with standard steel casements. Particularly useful for single casements not otherwise accessible for washing from outside.

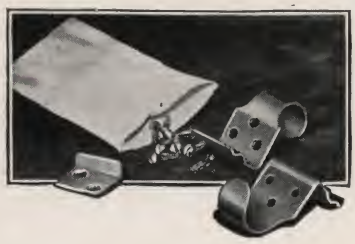
Co-ordinated With Win-Dor Operators—All Win-Dor Through-screen Operators and Series 61 Stays work with Series 70 Hinges the same as with standard close butts, giving opening of 90 degrees.



Note: Sash must be beveled as shown to assure clearance for operation of sash 1 ft. 4 in. and over in width.

Note strong attachment to window frame and wide bearing surface on the sash. When window is open full there is 4 in. between sash and window frame.

Win-Dor Screen Hardware, Series 81



This is the simplest and most inexpensive hardware for installing inside wood frame casement window screens. Spring clips are fastened to each side of the screen frame, and snap over round head screws in window frame. At the top, screen slides behind angle plate fastened to window frame.

Win-Dor Casement Stay, Series 61

A simple, economical device which has all the best features of security and convenience except through-screen operation.

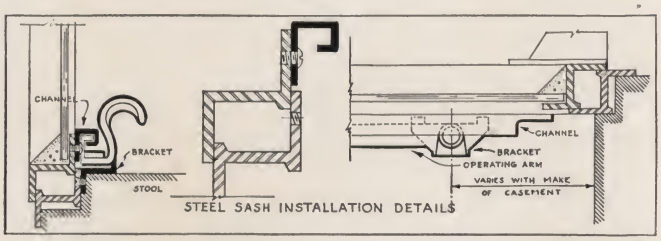
Where Recommended—This stay is widely used in large metropolitan buildings where screens are not used throughout.

Advantages—Automatic positive locking—rigidly engages sash wherever left open. Absolutely insures against breakage even with careless use.

Safety—The lift handle serves both to release the lock and swing the sash. This saves 1 ft. in reach and eliminates stretching by users. Requires only one hand to operate.

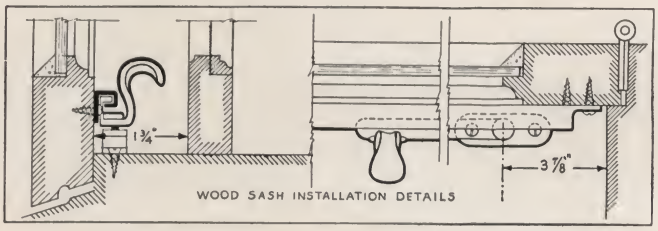
Low Cost—Series 61 Stays cost no more than thumbscrew adjusters or friction devices.





STEEL SASH INSTALLATION DETAILS





WOOD SASH INSTALLATION DETAILS

Identification

Win-Dor Devices are protected by patents, and though imitated, are not duplicated. The registered mark Win-Dor is stamped on all genuine fittings where it is inconspicuous when installed but available for protection of users.

Literature

Complete literature and details are available for all Win-Dor products in the form of A.I.A. folders.
Illustrated Price List of Casement Hardware Specialties
Series 80—Operator and Screen Unit
Series 80-A—Operator and Screen Unit
Series 50—Operator and Screen Unit

Win-Dor

A Few Prominent Win-Dor Hardware Installations and Their Architects

Beaux Arts Apartments, 44th Street and East River, New York, N. Y., Kenneth Murchison
A. J. Drexel Biddle Residence, Palm Beach, Fla., Addison Mizner
Albrook Field, Officers and N. C. O. Quarters, Panama, Canal Zone, Owner U. S. Government, Rolland C. Buckley
Joseph Widener Residence, Palm Beach, Fla., Trainor & Fatio
Harrison Williams Residence, Palm Beach, Fla., Trainor & Fatio
Southern Bell Telephone Exchange, Savannah, Ga., Marye, Alger & Vinour
Tudor City Apartments, New York, N. Y., Fred F. French Co.
Veterans' Bureau Hospitals, Tucson, Ariz. and Alexandria, La., U. S. Government
Duke University Buildings, Durham, N. C., Horace Trumbauer
London Terrace Apartments, New York, N. Y., Farrar & Watmough

ANDREW HOFFMAN

Casement Window Hardware

5034-8 State Street, CHICAGO, ILL.

DISTRIBUTERS IN ALL LARGE CITIES

Products

SLIDING CASEMENT HARDWARE FIXTURES.
IMPROVED CREMONE BOLT.
GRIPLOX SURFACE BOLT.

Also manufacturers of Ceiling Light Sash Fixtures and Griplox Casement fastener. Literature on request.

For Ideal School Map and Display Rail, see Manufacturers' Index.

SLIDING CASEMENT HARDWARE FIXTURES

Description—Hoffman Casement Fixtures (United States and foreign patents) are for outward or inward opening windows with any number of sash in each opening. Overhead fixtures carry each separate movable unit of two sash hinged together in a pair. Similar fixtures operate a single sash held in position next to a side jamb. Sash from 16 to 26 inches wide and from 4 to 6 feet high are generally preferred. Larger sash, with or without transom, have been satisfactory in schools and hospitals.

By eliminating the hinging of the sash to the frame and by carrying the weight of the sash from the top, these casement fixtures provide many desirable features.

Advantages—(1) The sash are firmly attached to the frame at the top by brass rollers engaging in a metal channel track, and at the bottom by guide blocks on a metal angle track.

(2) Top support prevents binding from swelling sash because sufficient clearance is left at the sill without affecting weathering.

(3) Stops both inside and outside at the jambs and three or more butts at the meeting stiles prevent warping and aid weathering.

(4) All cleaning is done from inside.

(5) The windows are weathertight.

(6) Ventilation. By slightly opening the window, a flue is created that draws out at the top all impure air which is automatically replaced with fresh air at the bottom without any direct draft.

(7) The sashes may be opened to any position up to the entire size of the frame at either jamb or at any point between the jambs and need no adjusters because one sash acts as a stay or brace to the other.

(8) The windows are designed by the architect and specified under carpentry or millwork the same as any other window. This company furnishes hardware only.

(9) Sash in series may be used in frames of any width omitting all mullions, providing head is securely bolted to lintel to prevent sagging and sill is anchored down to prevent buckling. (We have a special detail sheet suggesting several methods of head support.)

(10) Sash in even numbers may be 1⅜, 1¾, or 2¼ in. thick. Single sash or sash in odd numbers must be 1¾ or 2¼ in. thick.

Adaptability—Hoffman Casement Fixtures are strong and serviceable, will outlast ordinary window hardware, installation is simple and because windows so equipped combine all good features of all other types of windows they are adapted for typical use in any building, public or private.



Hoffman Casements Installed in Porches Operate in Pairs

Details—An architect's portfolio of complete details covering the use of these fixtures in various types of walls in new or old buildings will be forwarded on request. Included are suggestions on screening, draping, weatherstripping and other valuable information. Instruction sheets and full size mill details may also be had for the asking.

Hardware Furnished—The fixtures are packed in complete sets containing all necessary hardware for 2 sash in a pair or for single sash. Track is included up to 2 ft. for each sash. Wider sash require extra track.

Details of hardware will be furnished upon request. Cremone bolts should be used when the top of the sash is more than 7 ft. from the floor.

Grades and Prices—All prices net f.o.b. Chicago. Distribution through agencies. Stock finish: dull brass.

No. 1—Galvanized tracks; galvanized top hangers with brass wheels; galvanized bottom guides with brass swivel pins; *plated steel* butts, fasteners and handle. Stay arms for single sash, galvanized. For pairs of sash, per set—$5.00. For single sashes, per set—$4.50. For cremone bolt (steel) add $1.00.

No. 2—Same as No. 1 excepting butts, fasteners and handle are solid brass, tumbled finish (not hand polished). For pairs of sash, per set—$7.00. For single sashes, per set—$6.00. For cremone bolt (brass) add $1.50.

No. 3—Same as No. 2 excepting that sill track is *solid brass,* and butts, fasteners and handle are *solid brass,* hand polished. For pairs of sash, per set—$9.00. For single sashes, per set—$8.00. For cremone bolt (brass) add $1.00.

No. 4—All parts *solid brass.* For pairs of sash, per set—$12.00. For single sashes, per set—$10.50. For cremone bolt (brass) add $1.00.

Also additional grades for both outward and inward opening windows.

Information Required with Orders—(1) Exact width of opening *jamb to jamb* (not between stops; (2) number of sash in each opening; (3) if single sash are used, state whether they swing to the right or left when facing them from inside the room. (4) Give the grade of hardware and the finish desired. (5) Sash thickness and approximate height is desirable, but not necessary. (6) State if cremone bolt is wanted.

Specification Form—All window frames and sash shall be milled according to details and the contractor shall exercise particular care to set the frames perfectly level and square and shall bolt the head to the lintel and anchor down the sill at intervals not exceeding 4 ft. wherever the span is greater than 4 ft. The sash shall be hung with Hoffman Casement Fixtures (here insert grade number with or without cremone bolt) as manufactured by ANDREW HOFFMAN, 5036 State Street, Chicago, in exact accordance with details and directions furnished by the manufacturers.

COMBINATION CREMONE BOLT

For Hoffman Sliding Casement Windows—Used on Outswinging Only

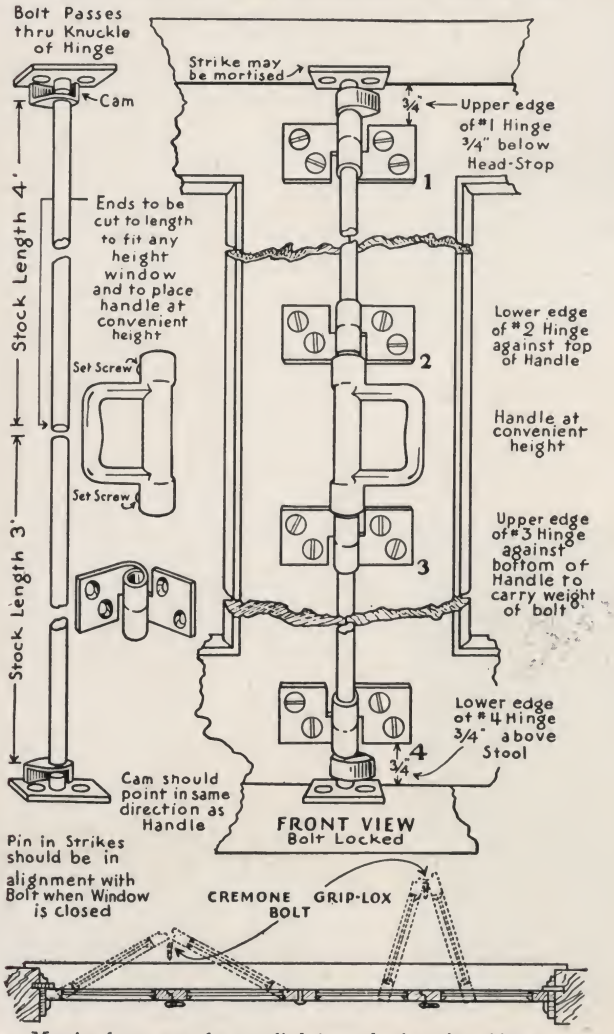
The Hoffman Combination Cremone Bolt combines the functions of hinges, fasteners, and pull handle, and is especially designed for use with outswinging Hoffman Sliding Casement Windows, in pairs only. Single sash and inswinging sliding casements should be equipped with the GripLox Cremone Bolt as shown on the following page.

The Hoffman Sliding Casement Windows, when equipped with this combination cremone bolt, are drawn in tightly and locked top and bottom in one operation by a quarter turn on a handle located at a convenient height above the floor.

This combination bolt consists of cams, operating on the GripLox principle, at the top and bottom of rods which are joined in a cast bronze handle, the whole assembly being supported by brackets which also act as hinges for the casements.

The use of this full length bolt makes the window easy to open or close, simplifies ventilation control, and closes the window so tightly as to make it weatherproof even in exposed positions.

COMBINATION CREMONE GRIP LOX BOLT WITH HOFFMAN SLIDING WINDOWS



Mortise butts may be supplied instead of surface hinges. Allow 2⅛-in. clearance between sash and screens



A Pair of Outswinging Sliding Casements

Especially when windows are difficult to reach, as over a sink (see illustration) or over a radiator, is the unique ease of operation of the Hoffman Sliding Casement Window and combination bolt appreciated. Cremone bolts should be used when the top of the sash is more than 7 ft. from the floor.

The advantages realized by the use of the Hoffman Combination Cremone Bolt are summed up in these points:

(1) A positive horizontal force is applied to the sash, drawing them in tightly, even though they may be warped or heavily weather-stripped.

(2) The mechanism is simple and positive with no gears to wear or get out of order.

(3) There is no disfiguring wear on visible surfaces due to the fact that the bolt does not slide vertically through sleeves.

(4) The bolt is stocked in 7-ft. lengths and may be cut down on the job to any size, to fit even the shortest windows. The installation is very simple; there is no mortising necessary and the hack-sawed ends of the rods are concealed within the handle.

(5) The price is very moderate.

The Hoffman Combination Cremone Bolt is made of solid brass or plated steel. The bolts are stocked with a 4-ft. upper section and a 3-ft. lower section. The stock bolt therefore may be used on casements up to 7 ft. high, and the handle may be placed as much as 4 ft. below the top of the sash.

GRIPLOX CREMONE BOLTS

For Single and Double Casements
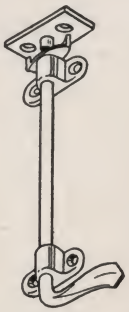
Hoffman Cremone Bolts overcome the usual obstacles to easy closing and secure locking of inswinging or outswinging casements by use of the Grip-Lox principle (explained on the preceding page). Cremone bolts should be used when the top of the sash is more than 7 ft. from the floor. For sash or doors less than 7 ft. the surface bolt in 6 or 9-in. length as shown at the right-hand margin of this page should be used.

On Double Outswinging Casements—With rabbeted meeting stiles—see upper illustration—the cremone bolt is applied to the sash that has the outer rabbet projection. When the other sash is closed first, the cremone bolt draws both sash tightly shut, top and bottom at once, by a quarter turn of a handle at a convenient height above the floor.

On Double Inswinging Casements—With rabbeted meeting stiles, one bolt applied to the sash that has the inner rabbet projection will clamp both sash shut. If, as in the lower right illustration, the meeting stiles are not rabbeted or fitted with an astragal, a bolt is applied to each sash. Notice that the unlocked sash is warped at the top. This warped sash is easily and tightly closed with the Hoffman Cremone Bolt.

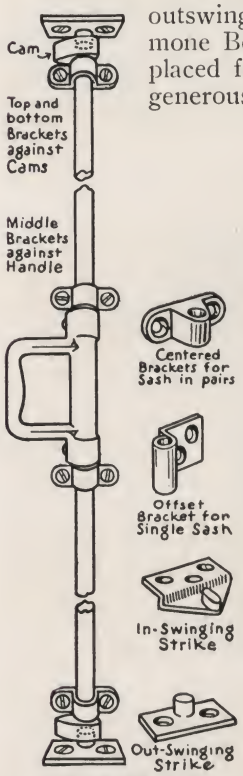


Double Outswinging Casements



GRIP LOX SURFACE BOLT for *Casements, In- and Out-Swinging, French Doors and Bed Closet Doors 6" and 9" long*

On Single Casements—Inswinging or outswinging. By attaching the Hoffman Cremone Bolt with offset brackets, the handle is placed far enough from the side jamb to give generous clearance for the fingers.



CREMONE GRIP LOX BOLT



Single Outswinging Casements



Above:

Double Inswinging Casements

Note: The stock length of the bolt is 7 ft. It is easily cut down on the job to fit any window. Installation is simple and no mortising is required

MONARCH MANUFACTURING CO.

Builders Hardware

2511-2525 Hart Avenue
DETROIT, MICH.

EASTERN REPRESENTATIVE, George Pariot, 101 Park Avenue, NEW YORK, N. Y.

Products

MONARCH FRICTION SASH CENTERS.

Also manufacturers of Monarch Panic Exit Devices and Monarch Builders' Hardware.

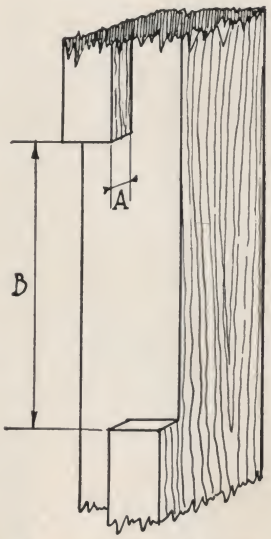
The Latest Improved Monarch Friction Sash Center

Designed for use on wood or metal sash, this sash center is equipped with automatic friction and will hold the sash open at any desired angle without the use of a sash adjuster.

It can also be used on double hung windows with a hanging stile, allowing the sash to pivot as well as slide up and down; or on single windows hung on sides, top or bottom. This feature permits cleaning both sides of the glass from the room side.

Ideal Transom Equipment

They are specially adapted for inside or outside transoms and will hold the transom in any position without the use of a transom lift.



Detail of Rabbet for Frame and Sash

A	½	in.	for all sash
B	4½	in.	for 1⅜ in. sash
B	4⅝	in.	for 1¾ in. sash
B	4⅝	in.	for 2¼ in. sash

Absolutely Weatherproof

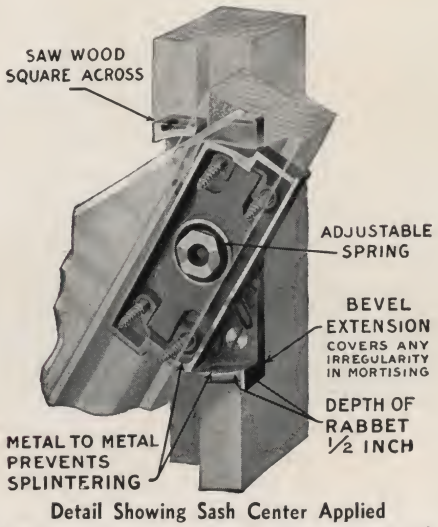
The construction of our pivot guarantees a perfectly tight joint at all times. This feature is very important on outside windows and transoms.

Monitor sash or factory windows can be operated from the floor with a cord, and will hold the monitor sash open as desired.

Catalogue

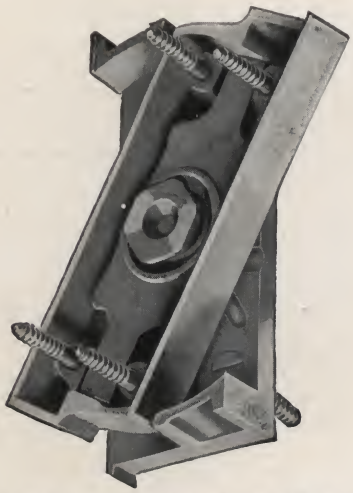
We make a number of other kinds and types of sash pivots including Monarch Elevating Pivots. All are shown in our latest catalogue. Any details or samples wanted will be mailed on request.

Write for our latest catalogue showing our complete line of builders' hardware and fire exit devices. Let us quote on your special hardware; we specialize in this.



Detail Showing Sash Center Applied

Note: The adjustable tension on the friction spring and the mortise cut straight across the sash and hanging stile make it easy to apply and adjust to either wood or metal sash



Latest Improved Monarch Sash Center

Thickness of sash, in.	Cast iron	Cast brass or bronze
1⅜	No. 140	No. 0140
1¾	No. 141	No. 0141
2¼	No. 143	No. 0143

C. M. STEINER CO., INC.

Manufacturers of Window Hardware
PITTSBURGH, PA.

Products

ELEVATING WINDOW PIVOTS.
ELEVATING CASEMENT HINGES.

Giesey Elevating Window Pivot

For large vertically pivoted wood or metal sash (pivoted top and bottom); no lock or adjuster rods required. Dusttight and weathertight when closed.

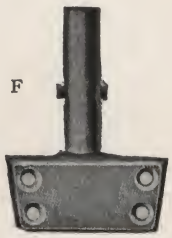
Full sized detail blueprints will be sent on request.

How to Specify—Provide Giesey Pivots small size for 1¾ to 2⅛-in. sash and large size for 2¼ to 3-in. sash. Made of cast iron, brass or bronze, in any finish.

Note: Whether sash be 1¾ or 3 in. thick, follower and mouldings forming box for the same must be 1¼ in. deep.

Follower must be at least 1½ in wider than thickness of sash.

Bottom rail for all 1¾ to 2⅛ in. sash must not be less than 4⅛ in. high. Bottom rail for all 2¼ to 3-in. sash, must be from 5 to 6 in. high.



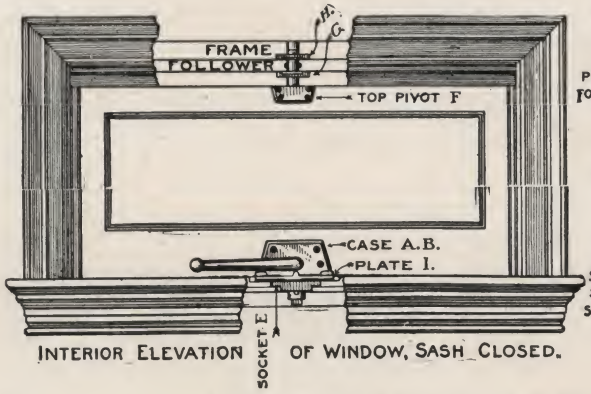
Top Pivot F fits flush in top rail of sash



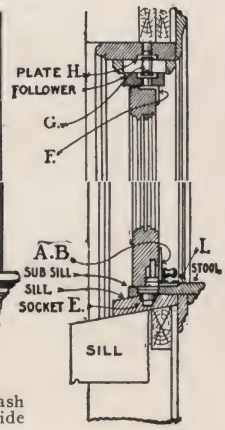
G fits flush with top side of follower



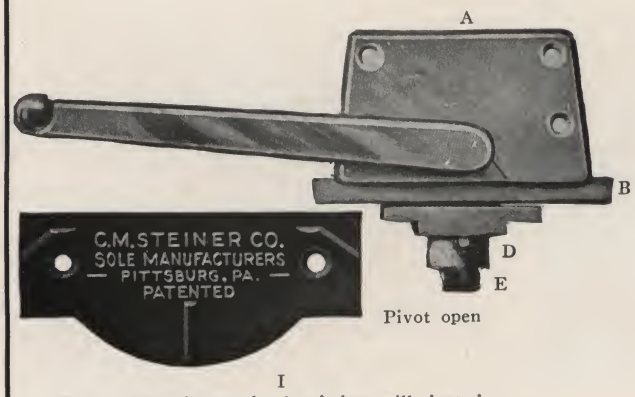
H fits flush with lower side of head of window frame



INTERIOR ELEVATION OF WINDOW, SASH CLOSED.



A and B fit in front of bottom rail of sash
E fits flush with sill on line with inside stool of window frame



Pivot open

I

I fits flush in stool of window sill just in front of A and B

Giesey Elevating Window Pivot

Giesey Elevating Casement Hinges

For inswinging, vertically hinged casement; no locks, or adjuster rods are required.

These hinges make it possible to raise the sash above the stool and swing into the room, making both sides of the glass accessible for cleaning and permitting the use of screens which can be hinged to swing out.

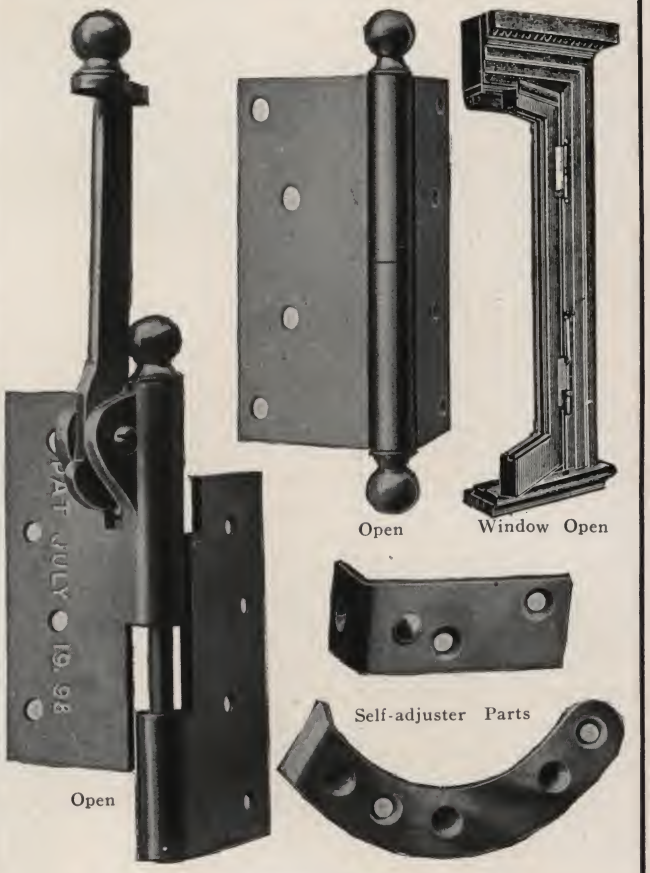
When closed, the sash drops below the stool, thereby affording a dusttight and weathertight casement. The self-adjusting parts shown in illustration permit the sash to be held open at any one of three angles for ventilation.

The lever in closed position locks sash securely and is impossible of being pried open from the outside.

A set consists of one upper and one elevating (lower) hinge.

Full size detail blue prints sent on request.

How to Specify—Provide Giesey Hinges sizes 4x4 in. for 1¾ to 2-in. sash; 5x5 in. for 2 to 2¼-in. Sash; 6x6 in. for 2¼ to 2¾-in. sash. In cast iron, brass or bronze in any finish. Use additional upper hinge for sash over 5 ft. high.



Open

Open

Window Open

Self-adjuster Parts

Giesey Elevating Casement Hinge

INCORPORATED 1904

THE WILLIAMS PIVOT SASH CO.

Reversible, Pivoted and Casement Window Equipment

CLEVELAND, OHIO

BRANCH OFFICES

ALBANY, N. Y., Cassius J. Logan, 271 Washington Avenue
BUFFALO, N. Y., James P. Hunt, 333 Jackson Building
CHICAGO, ILL., M. R. Duffy, 1514 Tribune Tower
CINCINNATI, OHIO, Richard F. Strong, 206 W. Court Street
DETROIT, MICH., The Rayl Co., 1233 Griswold Street
GREENVILLE, S. C., James McCabe, P. O. Box 573
LOS ANGELES, CAL., Kerner Sales Co., Ltd., 802 Transportation Building
MILWAUKEE, WIS., Phillip Gross Hardware & Supply Co., 822 No. Third Street
NEW YORK, N. Y., Walter T. Voege, Graybar Building
PHILADELPHIA, PA., J. H. Windell, 1505 Race Street
PITTSBURGH, PA., J. R. Colclough, 1425 Dagmar Avenue
ST. LOUIS, MO., P. C. Baerveldt, 1458 Graham Avenue
SAN FRANCISCO, CAL., Kerner Sales Co., Ltd., 450 Clementina Street
SEATTLE, WASH., Kerner Sales Co., Ltd., 842 E. 83rd Street
CANADA, Aikenhead Hardware Limited, 17-21 Temperance Street, TORONTO

WILLIAMS REVERSIBLE WINDOW EQUIPMENT

Double Hung and Plank Frame Types

Williams Reversible Windows are windows which can be turned around so that the outside of the sash can be cleaned from the inside of the building. They can also be tilted for overhead ventilation and can be turned at right angles to the window frame to give 100% opening.



Hospital Window Being Cleaned from the Inside

Adaptability

Williams double hung reversible window equipment is adaptable for use in office buildings, hospitals, hotels, schools—in fact in any place where good double hung wood windows are used.

The Plank Frame Equipment (not sliding) is especially adaptable for schools. It eliminates weights, cords and pulleys as well as provides more weathertight windows than the ordinary double hung window which is not weatherstripped. This type provides greater light area and is more economical in construction.

Advantages

Cleaning—Outside of both sash may be cleaned from inside the room with the window practically closed. With the Double Hung Type, all cleaning is done from the floor level. Much less time is required and cheaper help can be obtained than on outside cleaning. This reduces the window cleaning cost enough to pay for the entire equipment in a few years and is an economic factor throughout the life of the building.

In Hospitals—Williams Reversible Window Equipment is particularly adapted for use in hospitals where draftless ventilation is of the utmost importance, and where patients must not be annoyed by cleaners climbing in and out of windows.

No Air Leakage—Tests for air leakage between sash and reversible strip prove conclusively that passage of air at this point is negligible. These tests were thorough and comprehensive—a copy will gladly be sent on request.

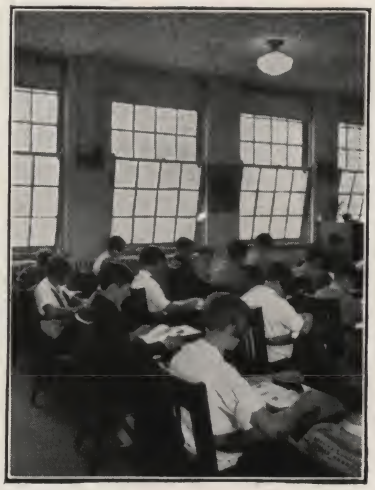
Weatherstrips—On all work where our double hung equipment is to be used we get in touch with the successful weatherstrip contractor to arrange with him for the proper grooving of the back of our reversible strips to accommodate his particular type of weatherstripping. We cut this groove exactly to his detail at our factory.

Screens—For double hung windows we recommend full length top hinged or roll screens. The leading screen manufacturers accommodate their screens to our equipment so that the windows are cleaned without removing the screens. Half length screens also can be used.

Eliminates Rattling—To eliminate the objectionable rattling of ordinary windows, the Williams equipment includes a roller spring feature which maintains constant contact with both sides of the window. This not only prevents the sash from rattling but also serves to make the sash slide up and down with greater ease.

Williams Casement Subsill—An absolutely stormproof subsill for the bottom of inswinging casement windows. A heavy brass closure bar operates from the subsill into the bottom rail of the sash.

Illustrations and details will be forwarded on request.



Draftless Ventilation

Williams Vertically Pivoted Window Equipment—For windows pivoted top and bottom, we furnish specially designed pivot castings of iron or bronze with our stormproof subsill at the bottom of the sash, and our corrugated strip at the top, to insure weathertightness.

Illustrations and detailed information on request.

Installation and Responsibility

A staff of expert mechanics is maintained to install Williams equipment. This service also includes the fitting and hanging of sash.

Because the home office controls the installation, we can and do assume responsibility for the proper operation of Williams equipment. This policy has been a strong factor in establishing this product during the past 28 years.

Acceptance

Many of the most prominent architects throughout the country have repeatedly used this equipment in several thousand buildings. Owners likewise have indorsed its satisfactory service and reduced maintenance cost by continued and extended use.

Specifications

Double Hung—All double hung wood sash to be equipped with reversible fixtures as manufactured and installed by THE WILLIAMS PIVOT SASH Co., Cleveland, Ohio. Said Company to fit and install all sash on which their fixtures are to be used.

Plank Frame—All window sash to be of the plank frame type and equipped with reversible fixtures as manufactured by THE WILLIAMS PIVOT SASH Co., Cleveland, Ohio. The contractor shall furnish all frames and sash. THE WILLIAMS PIVOT SASH Co. shall apply their strips to the sash, and they shall fit and place these sash in their respective openings. The hardware (locks, lifts, sockets, and poles) for all windows equipped with Williams Fixtures shall be furnished and installed by them, and shall conform with the other hardware in metal and style of finish.

Construction Details Williams Reversible Window Equipment

No special frame or sash construction is required for Williams Reversible Window Equipment, the sash merely being made 1¾ in. narrower than the inside width of the frame. In the plank frame type, a plank frame is substituted for a box frame.

The double hung equipment retains all the features of a sliding window with the added advantage of permitting either sash to be completely reversed or tilted to any position. The plank frame equipment does not have the sliding feature.

The Williams equipment consists of:

Williams Corrugated Side Strip—A strip made of well seasoned hard maple, ⅞ in. thick, of width equal to the thickness of the sash, and corrugated on the sash side. The sash is corrugated (by our mechanics) to meet the corrugations on the strip. The strip is attached to the sash by means of the:

Williams Truncated Cone Pivot—A reliable and effective pivot by which the weight of the sash is automatically used to draw the reversible strip and sash tightly together. The corrugations in the strip and sash are thereby firmly meshed and make a dependable weather-tight joint. This pivot also holds the sash in position when tilted.

Spring Rollers—In the back of the reversible strip is embedded a series of roller and spring devices. Acting against the jamb when the window is closed, these help keep the strip in snug contact with the sash, preventing the window from rattling and allowing the sash to slide freely.

Finishing Hardware—Standard locks, handles, sockets, and poles may be used with the double hung equipment. We do, however, recommend the use of our finishing hardware especially designed for the plank frame equipment.

References

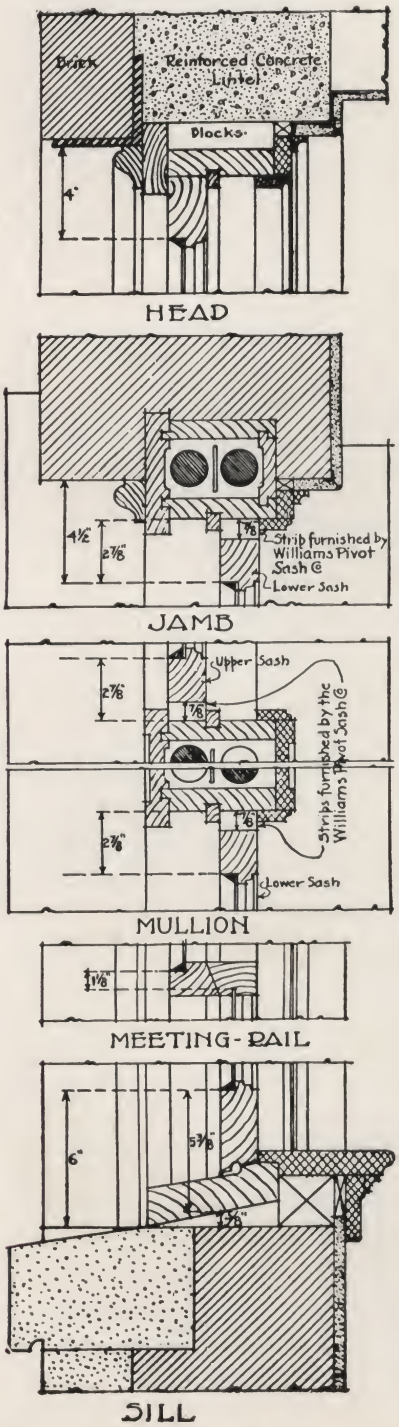
Several thousand buildings have been equipped with Williams reversible fixtures. Some typical installations, with number and types of installations:

Double Hung

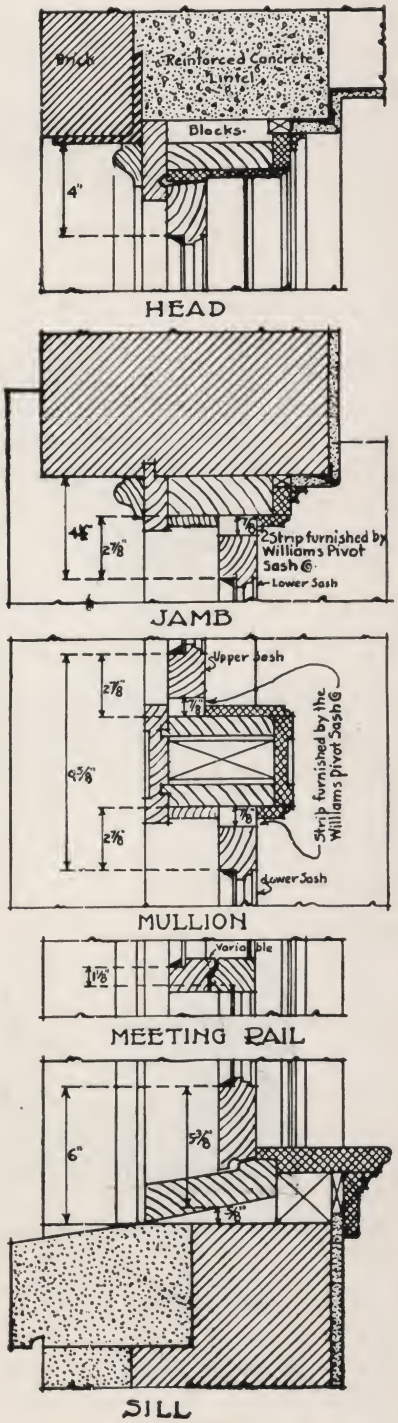
First National Bank, Detroit, Mich.—2914
Sacred Heart Seminary, Detroit, Mich.—1894
Indian Village Manor, Detroit, Mich.—1746
Ford Administration Building, Dearborn, Mich.—456
University Hospital Group, Cleveland, Ohio—2659
St. Luke's Hospital, Cleveland, Ohio—1095
Mt. Sinai Hospital, Cleveland, Ohio—688
Hotel Cleveland, Cleveland, Ohio—1229
Penton Publishing Co., Cleveland, Ohio—532
St. Mary's Academy, Monroe, Mich.—1998
Hoover Co., North Canton, Ohio—1903
St. Anne's Hospital, Chicago, Ill.—642
St. Joseph's Hospital, Milwaukee, Wis.—1022
Hotel Ten Eyck, Albany, New York—529

Plank Frame

McKinley High School, Canton, Ohio—849
Senior High School, York, Pa.—611
Harding School, Woodlawn, Pa.—429
Girls' Catholic High School, Philadelphia, Pa.—786



Double Hung



Plank Frame

G. F. S. ZIMMERMAN CO., INC.

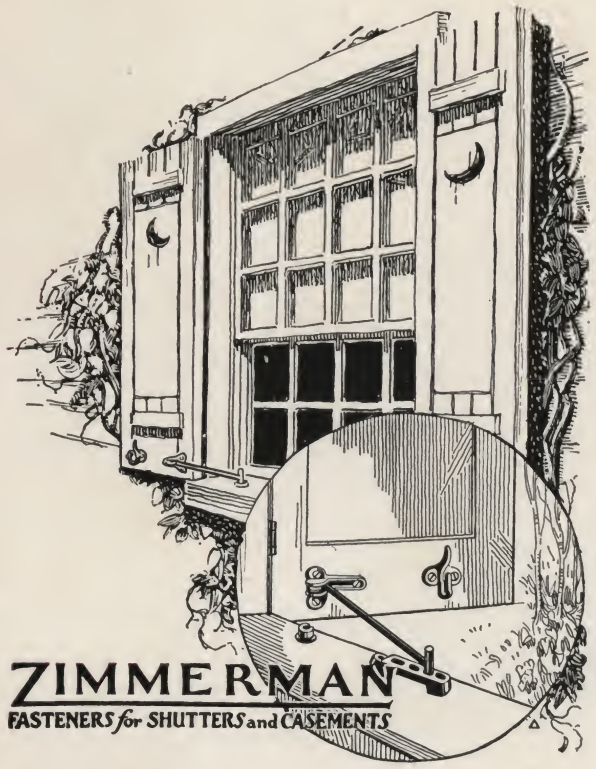
Manufacturers of Fasteners for Shutters and Casements

FREDERICK, MARYLAND

ZIMMERMAN FASTENERS MAKE SHUTTERS USEFUL AS WELL AS ORNAMENTAL

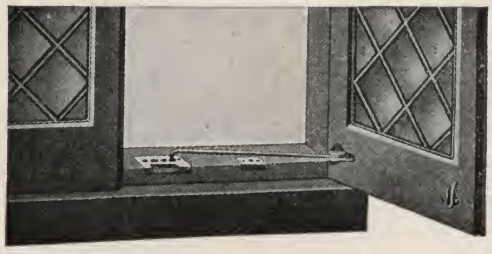
Zimmerman Fasteners make shutters conveniently useful by locking them positively, without rattle, in the closed position as well as wide open back against the wall, and in various intermediate positions. And they can be changed from one position to another quickly and conveniently.

With the head of the adjusting bar in the single hole sill cup, the shutter is held back against the wall with no possible rattle. The holes of the sill plate permit holding the shutter in various



bowed positions. Placing the adjusting bar through the C-loop on the shutter with the head of the bar in one of the holes in the sill plate locks the shutter closed so that it can not be opened from without.

Made of iron and steel, they do their work efficiently for the lifetime of the house.



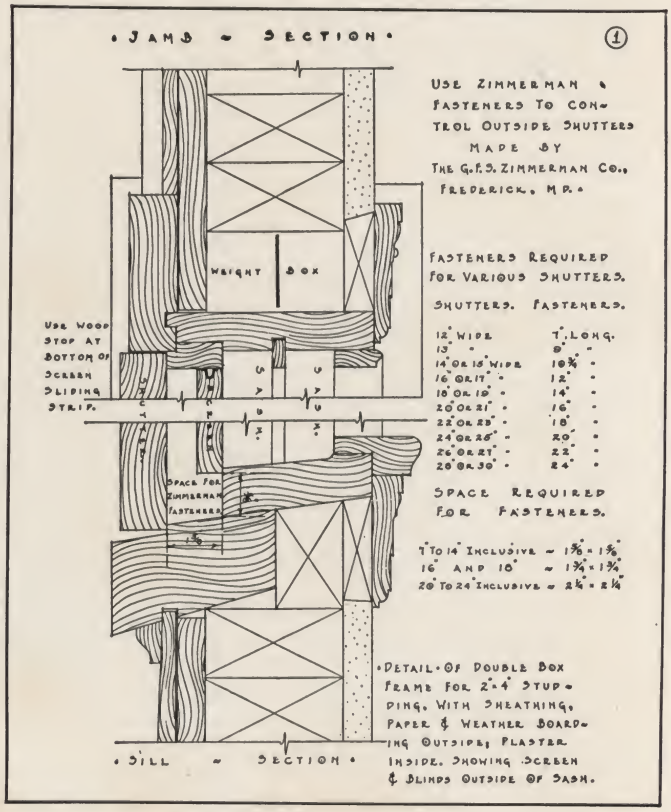
Furnished either galvanized or in black enamel. They are often painted to match the shutters.

Simple in construction and operation.

Inexpensive, strong and efficient.

Zimmerman Fasteners are often used as casement operators. Sill fixtures to mortise flush into the sill are supplied specially for this purpose when specified.

Zimmerman Shutter Fasteners, by a special detail, can be used with full length outside screen or storm sash. Full-size detail will be sent upon request.

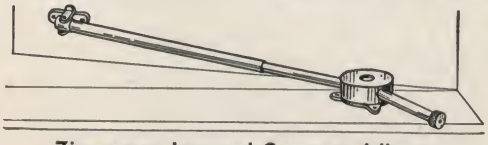


RETAIL PRICE LIST, ZIMMERMAN FASTENERS, PER DOZEN PAIRS

Width of shutter, in.	Size of bar length required, in.	Shutter fasteners	
		Black	Galvanized
12 or less	7	$ 9.00	$12.00
13	9	10.00	13.00
14 or 15	10¾	11.00	14.00
16 or 17	12	12.00	15.00
18 or 19	14	13.00	16.00
20 or 21	16	14.00	17.00
22 or 23	18	16.00	20.00
24 or 25	20	17.00	21.00
26 or 27	22	19.00	23.00
28 or 30	24	20.00	24.00

ZIMMERMAN IMPROVED CASEMENT ADJUSTORS

Zimmerman Improved Casement Adjustors, made of strong brass tubing and brass castings, operate on the sill, through inside screens where desired. A slight turn of the locking nut on the end of the handle releases or engages the friction cap and permits movement of the window by swinging the handle.



Zimmerman Improved Casement Adjustor
Retail price, $2.00 each. Solid brass

EARLE

PERIOD HARDWARE



EARLE
HARDWARE
MANUFACTURING
COMPANY
READING, PA.



Period Hardware *by* EARLE

Hardware plays a conspicuous part in interpreting the architectural style of a building. If the expression is to be faithful, the design, quality and craftsmanship of the hardware must blend with or even accent the other period features.

Earle Period Hardware is always a faithful reproduction of the design of the period it represents, modified only when necessary for adaptation to modern use. It is designed by artists who have made a special and extensive study of ancient and medieval craftsmanship. Rare and valuable books on the subject available for reference serve further to assure the absolute authenticity of all Earle designs. Whether the structure is English, Italian, Spanish, Colonial, Contemporary or of any other origin, Earle Hardware will authoritatively aid in expressing the motif.

The execution of Earle products is entrusted to artisans, who, unhurried in their work, do each thing the best way it possibly can be done. Nothing is done to conflict with the natural incentive of the craftsman to put into his work the enduring elements of strength and grace.

The Earle Hardware Manufacturing Company not only produces its own designs, but also gives cordial cooperation to patrons in the development of original designs. From ideas furnished us, we submit sketches and specific estimates. For this service a moderate charge sufficient to cover the bare cost of labor involved will be made. However, this charge will be deducted from the cost of the work in the event we are awarded the contract. Where it is unnecessary to execute special designs no charge will be made as the submission of estimates and blue prints on items now carried by us entails charges already fixed and absorbed in prices quoted.

Variations in stock patterns needed to fill the requirements of our patrons may be had at the nominal cost of making the necessary changes.

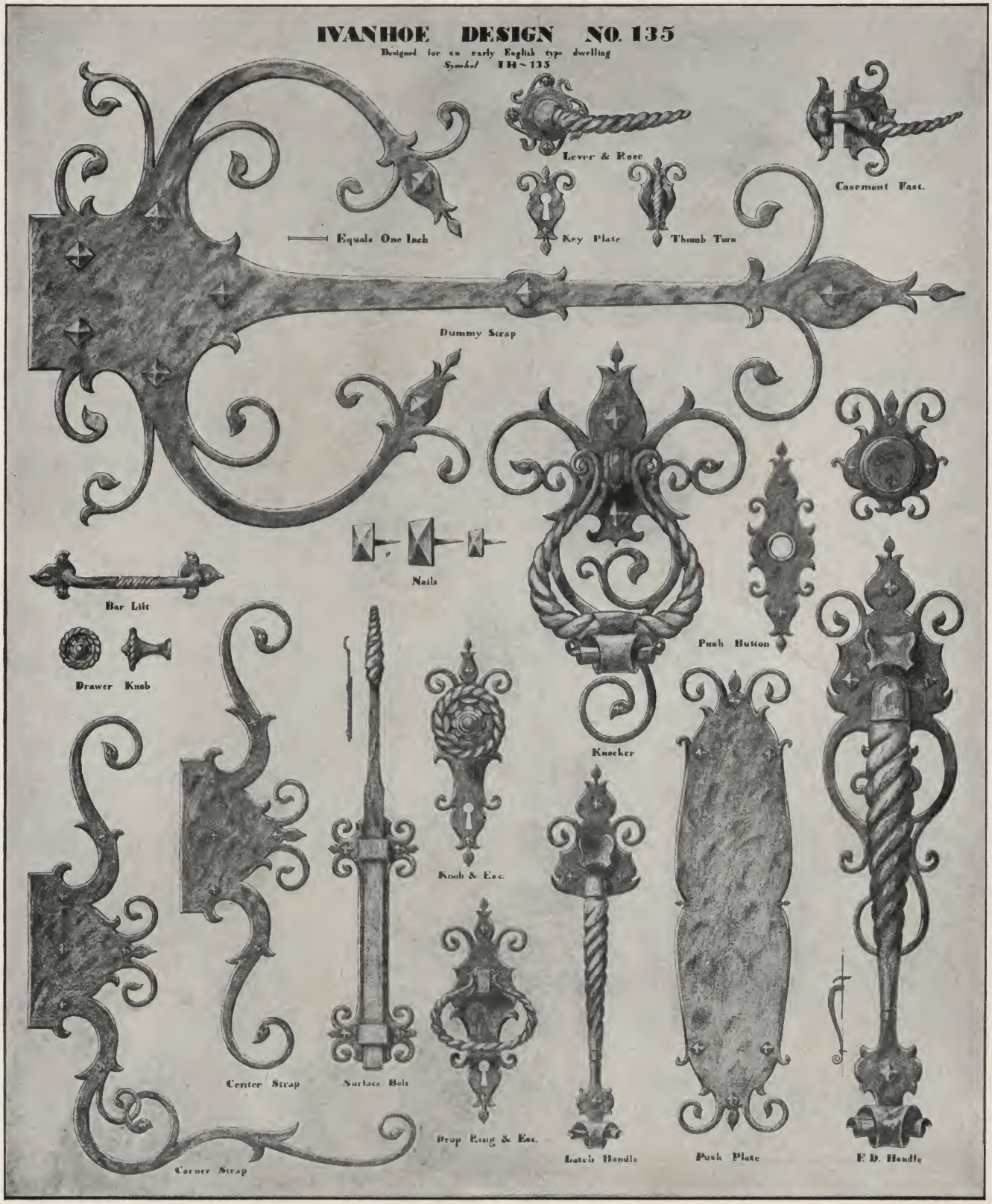
On the following pages will be found but a small number of the items we manufacture. In this limited space, however, we have tried to convey to prospective patrons some idea of the variety and utility of Earle Period Hardware.

As we are represented by outstanding builders hardware firms throughout the United States and Canada, it would be comparatively easy for a prospective customer to obtain stock items or literature illustrating designs executed in any period.

We have probably the most extensive list of finishes ever compiled by a builders hardware manufacturer, and execute our designs in genuine wrought iron and first grade cast metals as required by our patrons.

Locksets complete for any type of building can be obtained using designs taken from this catalogue or from our representatives more complete literature. Our locks are made from the best material required, carefully machined and assembled and guaranteed to give full service when properly installed.

The following illustrations are scaled and legend can be found on each plate where size is not given.



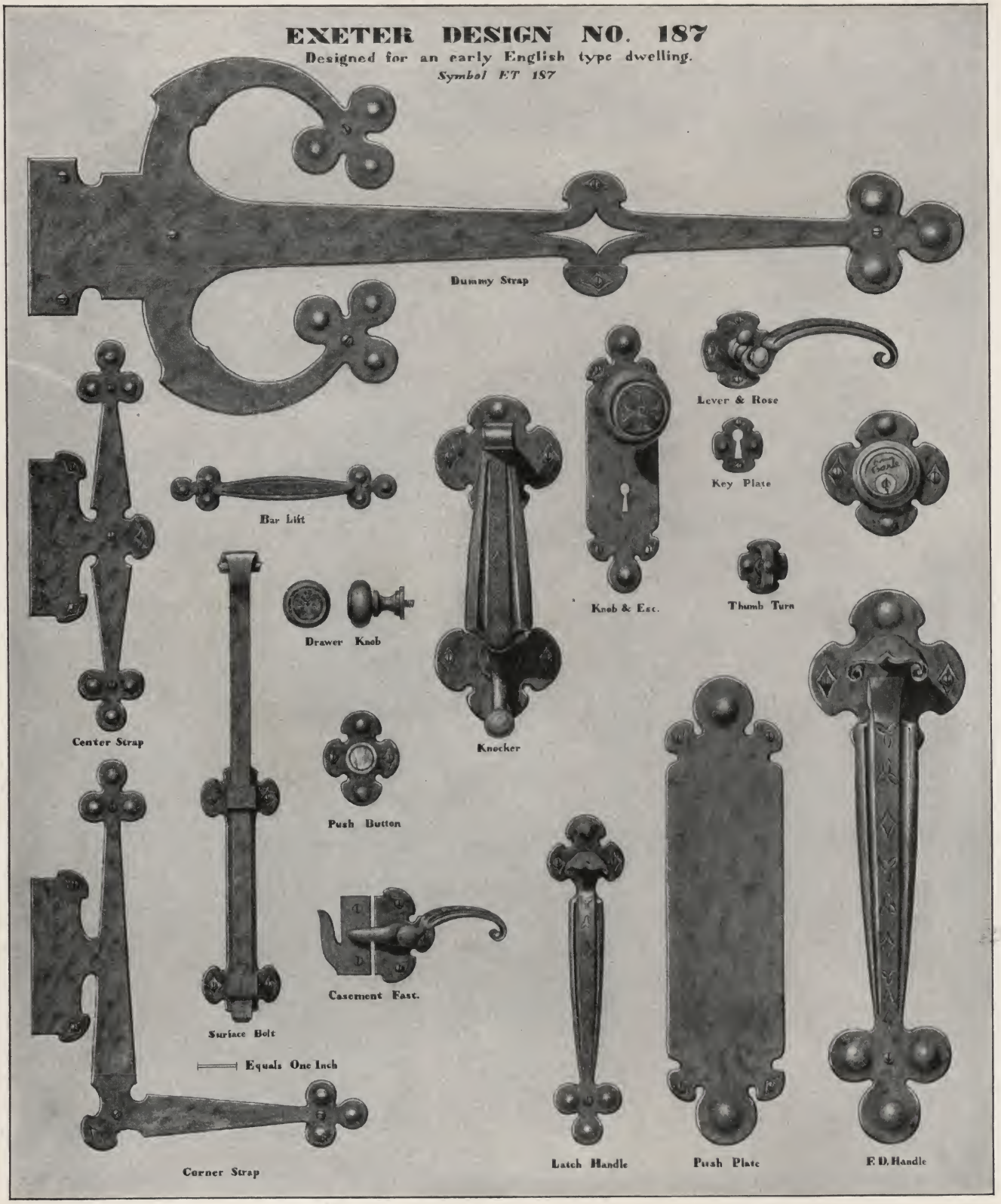
RICHLY ORNAMENTAL

Ivanhoe design draws its motif from the early English period. Gothic in feeling it will naturally blend well with English Gothic architecture. Rather plain plank doors serve well as a background for this graceful delicate motif.

EXETER DESIGN NO. 187

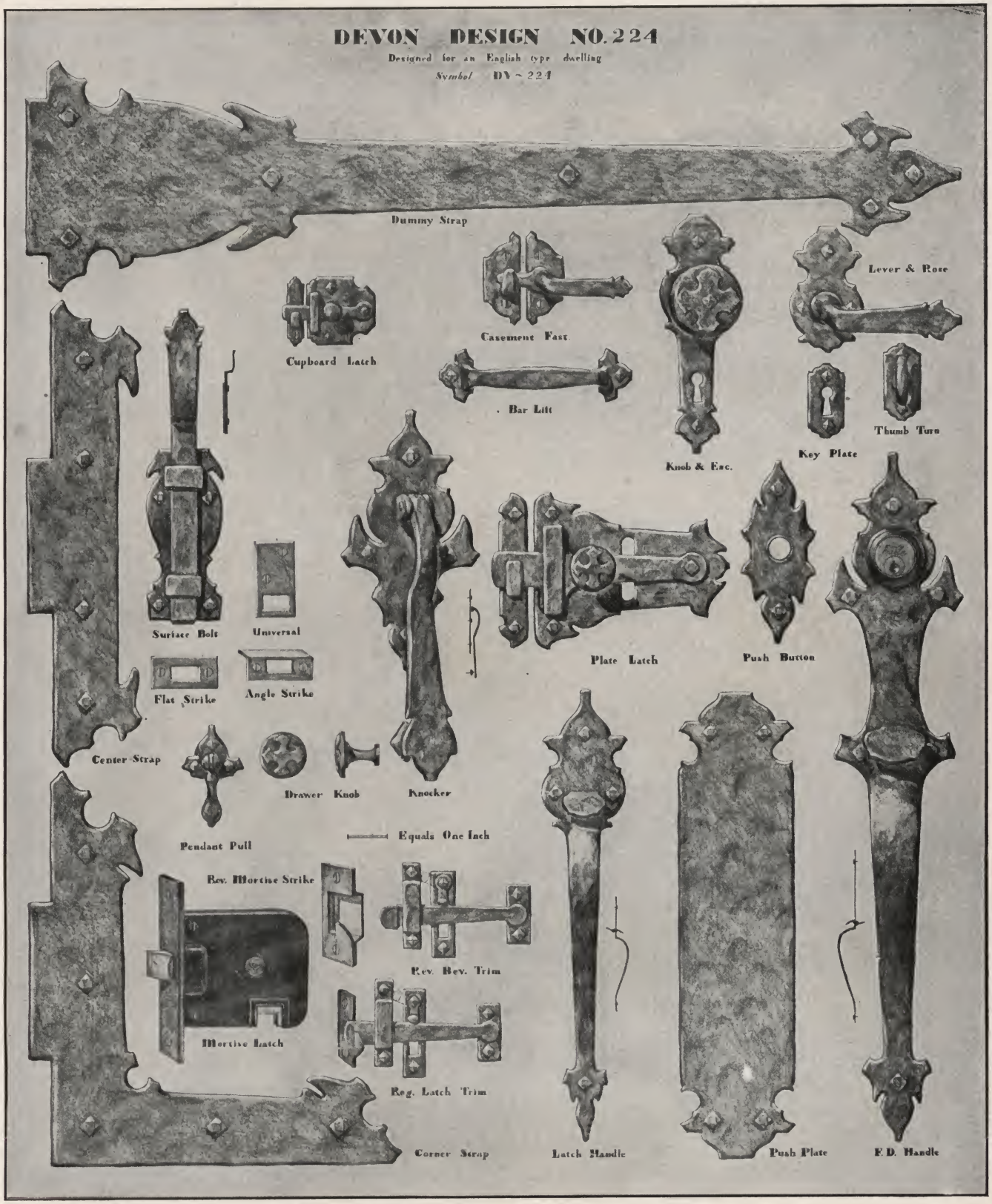
Designed for an early English type dwelling.

Symbol ET 187



AN ANCIENT MOTIF

This design, here classified as English, could be used quite successfully on other European type buildings as well. The motif, presumably originating from the clover leaf, was used extensively by designers in England, France, Italy, Spain, and adjacent countries, making the design rather universal in character.



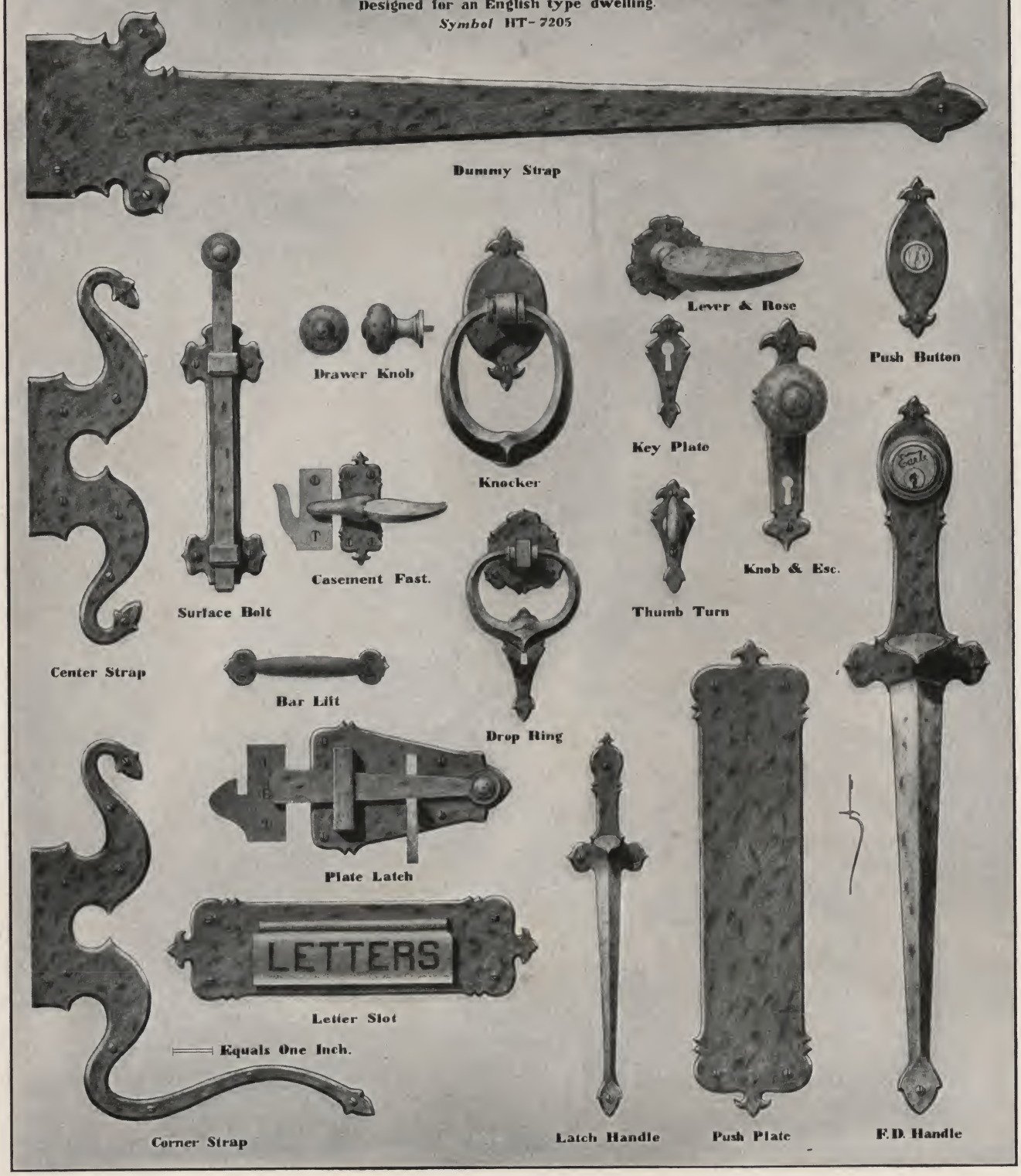
RUGGED INDIVIDUALITY

The Devon Design was created for general use on an English type dwelling of a rather indefinite feeling for period. Simple and sturdy in outline it will enhance the beauty of panelled doors when the molding and panelling are not too complex. It will fit in gracefully with an English type suburban or country home, its sturdy lines giving a sense of security and strength to a dwelling of this character.

HAMPTON DESIGN NO. 7205

Designed for an English type dwelling.

Symbol HT-7205



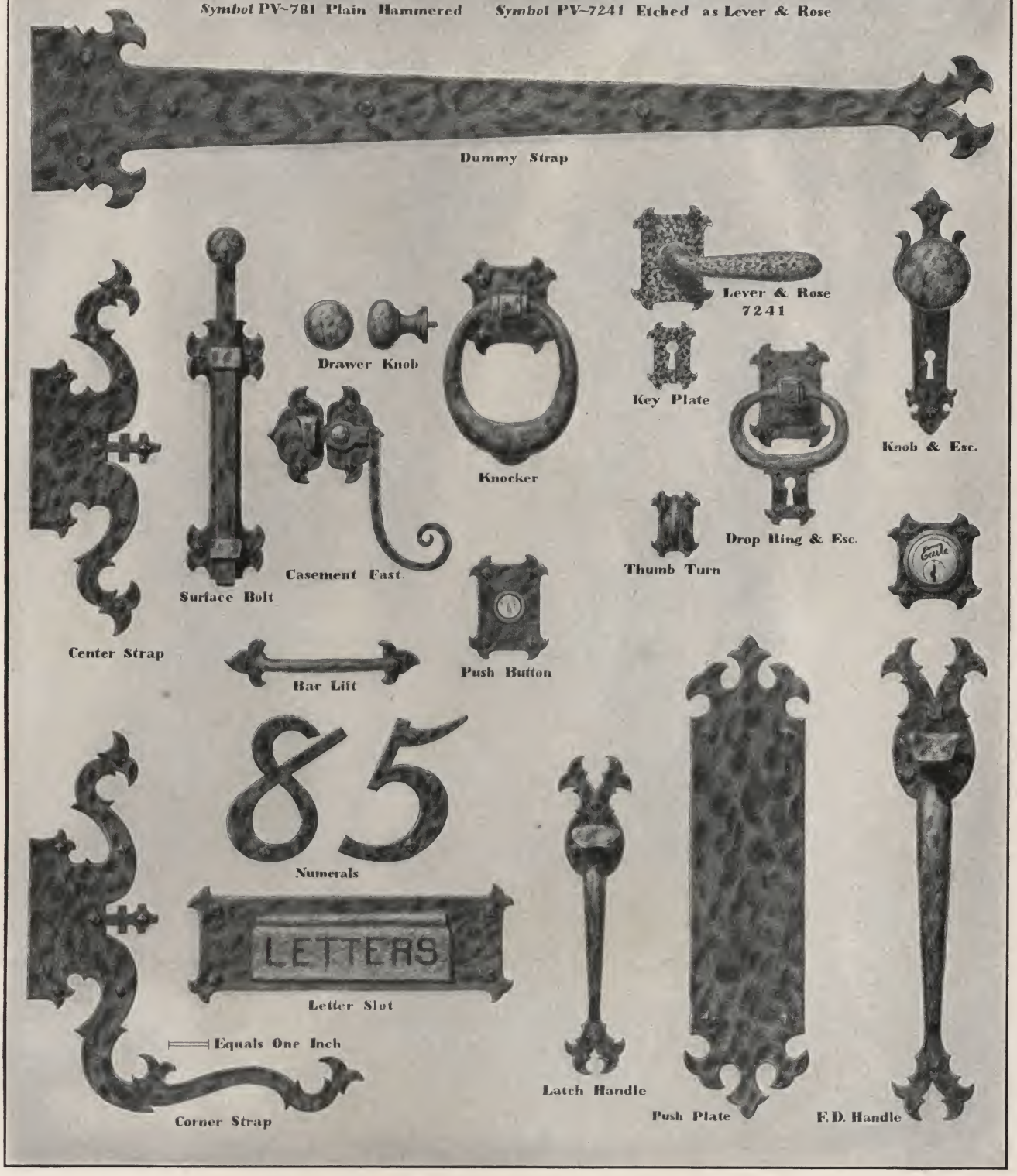
THE SWORD CONVENTIONALIZED

The inspiration for this rather unusual design, was the two-edged sword of English Knighthood, distinctly a modern adaptation. The simplicity of the design harmonizes gracefully with the panelling and molding generally used on English doors.

PROVENCE DESIGN

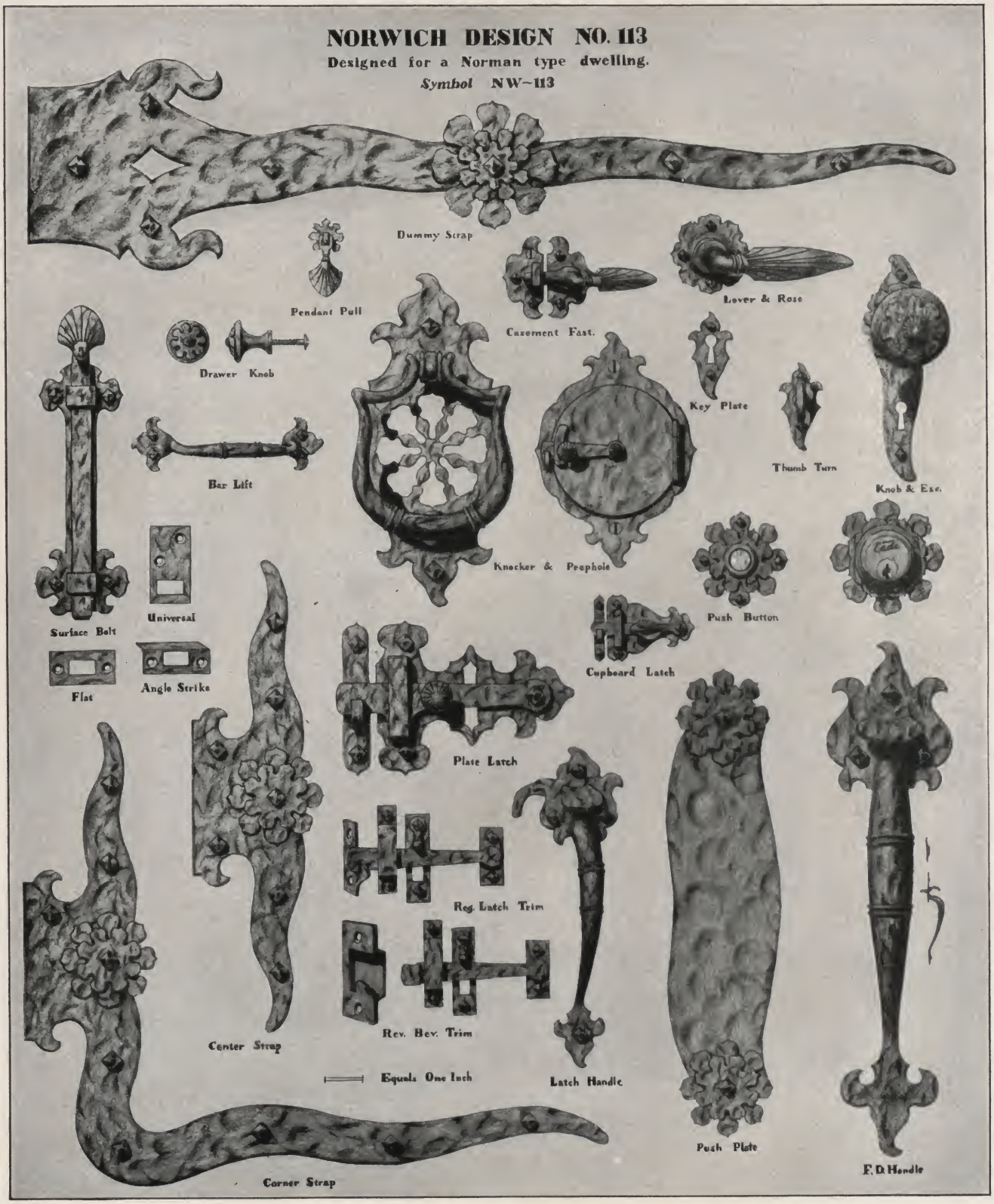
Designed for an English Tudor type dwelling.

Symbol PV~781 Plain Hammered *Symbol* PV~7241 Etched as Lever & Rose



GOTHIC IN CHARACTER

This is a good general design, and though classified as English, can be used for practically any home following old world influence in construction. As this hardware suite can be furnished in two surface textures, plain hammered and etched, it is important when ordering to specify the number or texture desired. Note lever, rose and keyplate for etched finish, also information listed at top of plate.



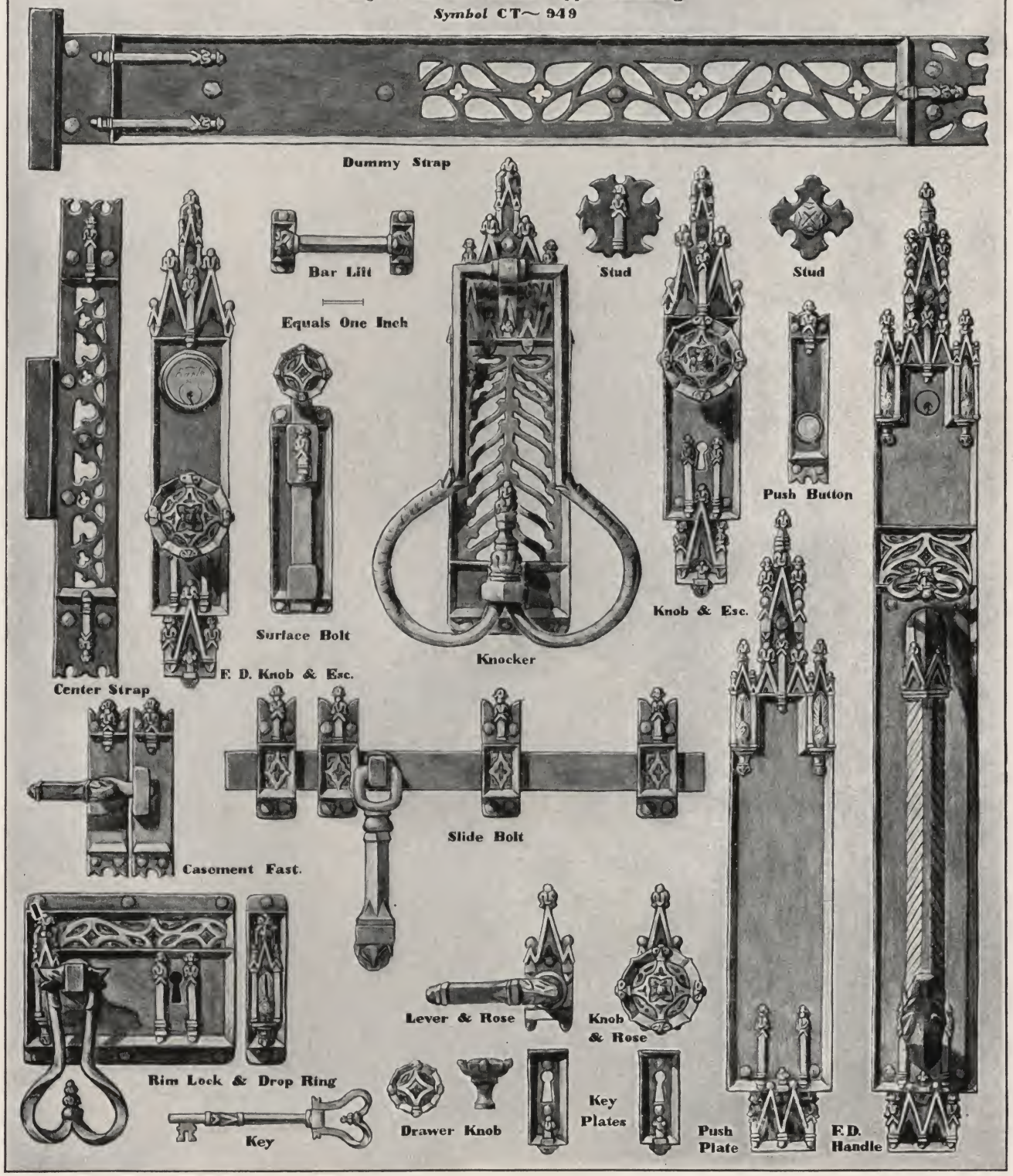
FOR THE SUBURBAN HOME

The quaint charm of a Norman provincial mansion, or cottage, environed by a typical estate or farm, it seems would express the ideal home. The above design though modernized is in harmony with this style of architecture and the items illustrated are varied enough in their uses to completely equip a home of this type, and still retain the charm of its predecessor.

CHARTRES DESIGN NO. 949

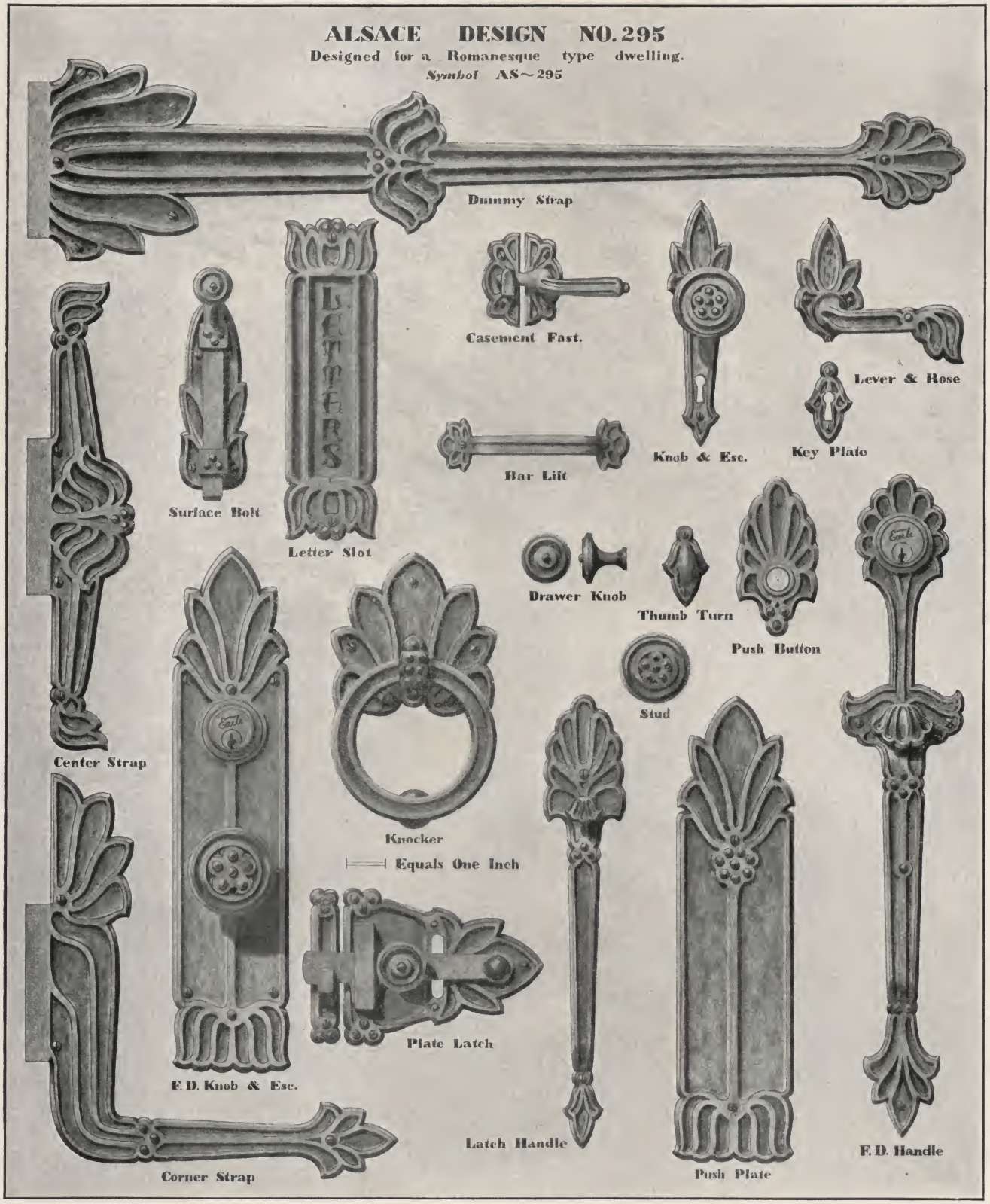
Designed for a Gothic type dwelling.

Symbol CT~ 949



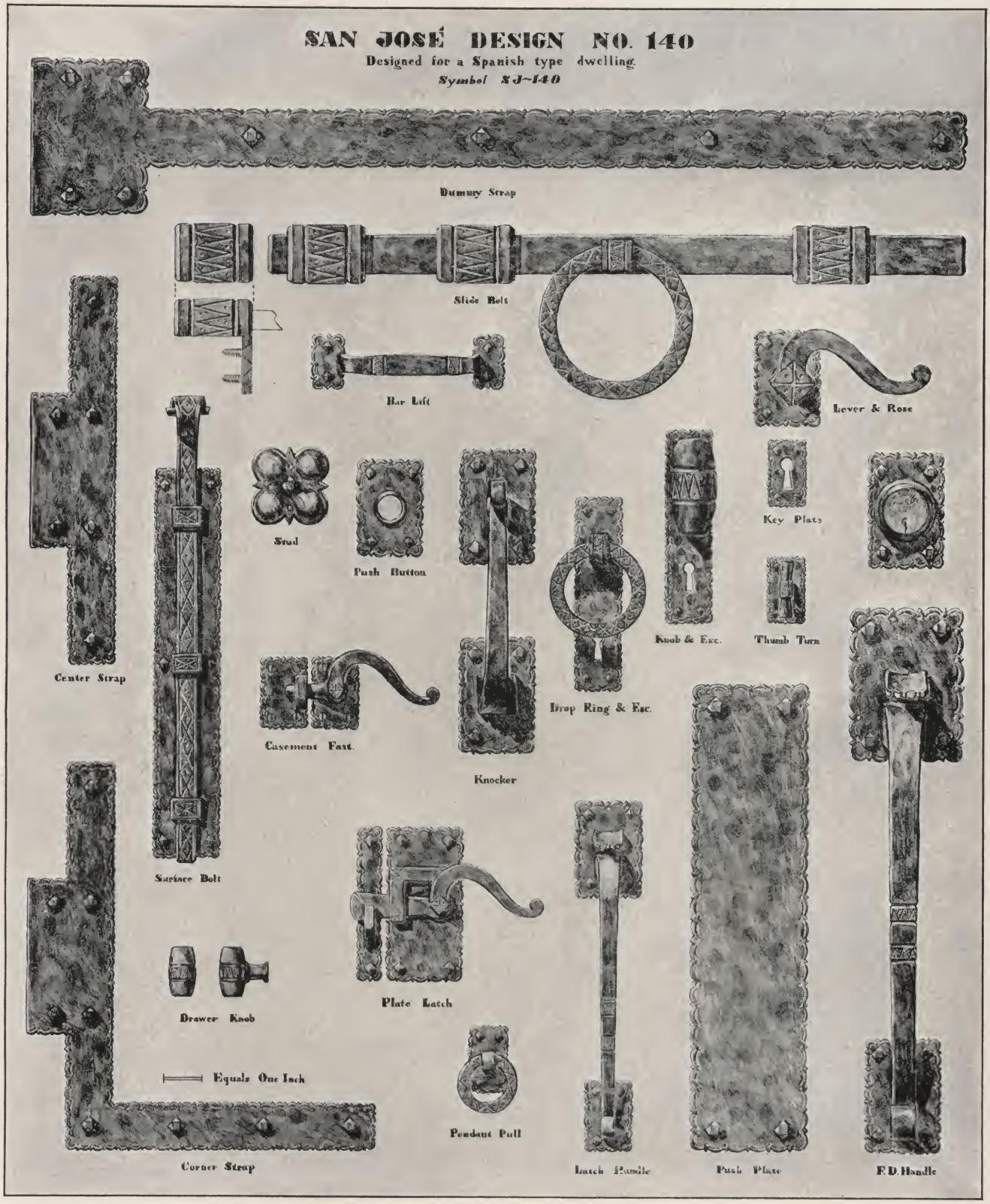
A TRUE CONCEPTION

Of all the architectural periods perhaps Gothic is the most widely known—due, no doubt, to its generous application to religious edifices and buildings of like character. There is something impressive and appealing in its use of tracery, leaves, gargoyles and arches, superimposed on a foundation and background massive and rugged as nature itself. In fact Gothic design received its inspiration from man's contact with the forest. The myriad impressions he received naturally were reflected in his handiwork.



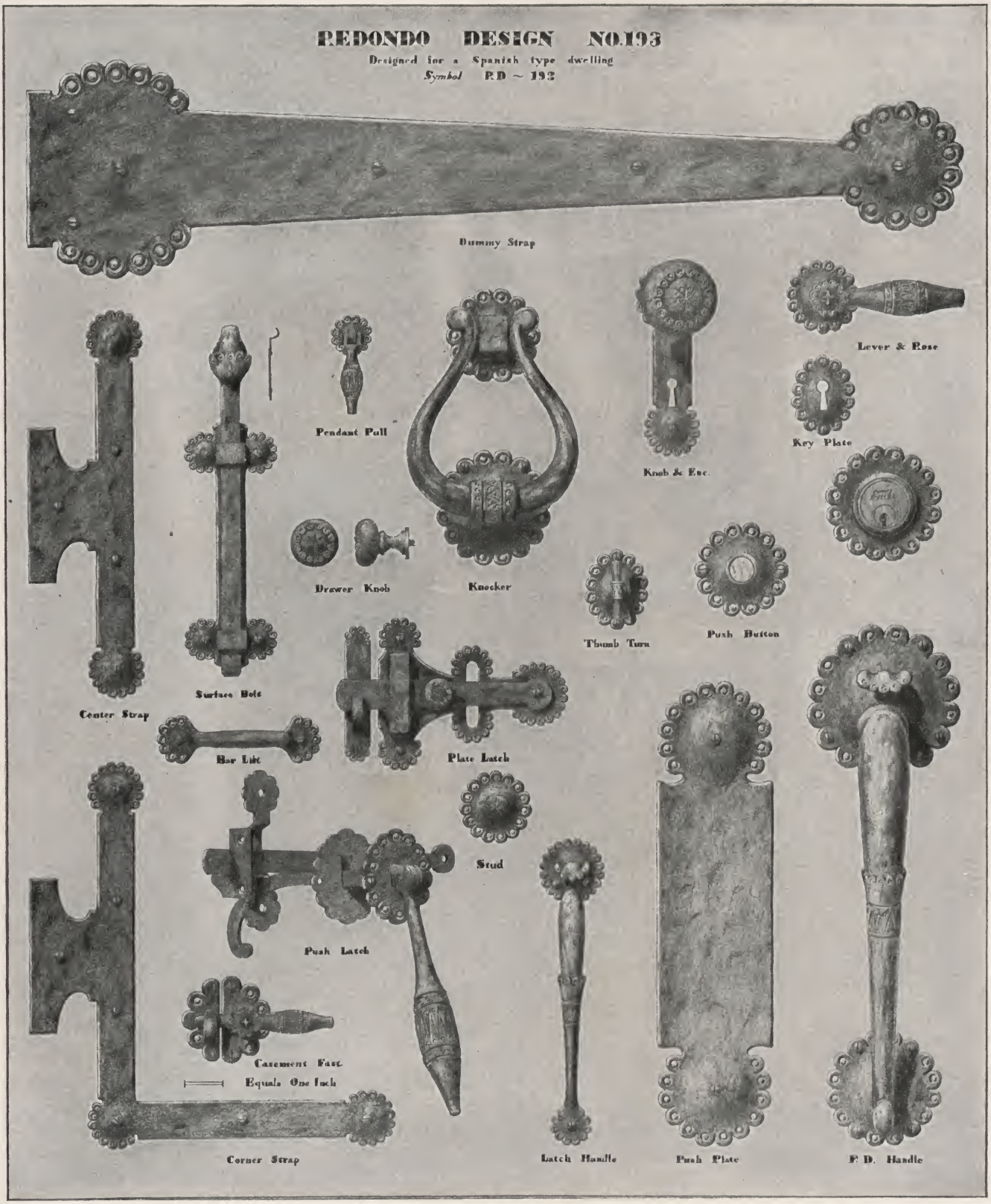
DIGNIFIED

The Roman influence, at the height of its power during the middle ages, is still being expressed in buildings of public and semi-public character. This design was developed for buildings of this character and can be had in complete lock sets finished as desired.



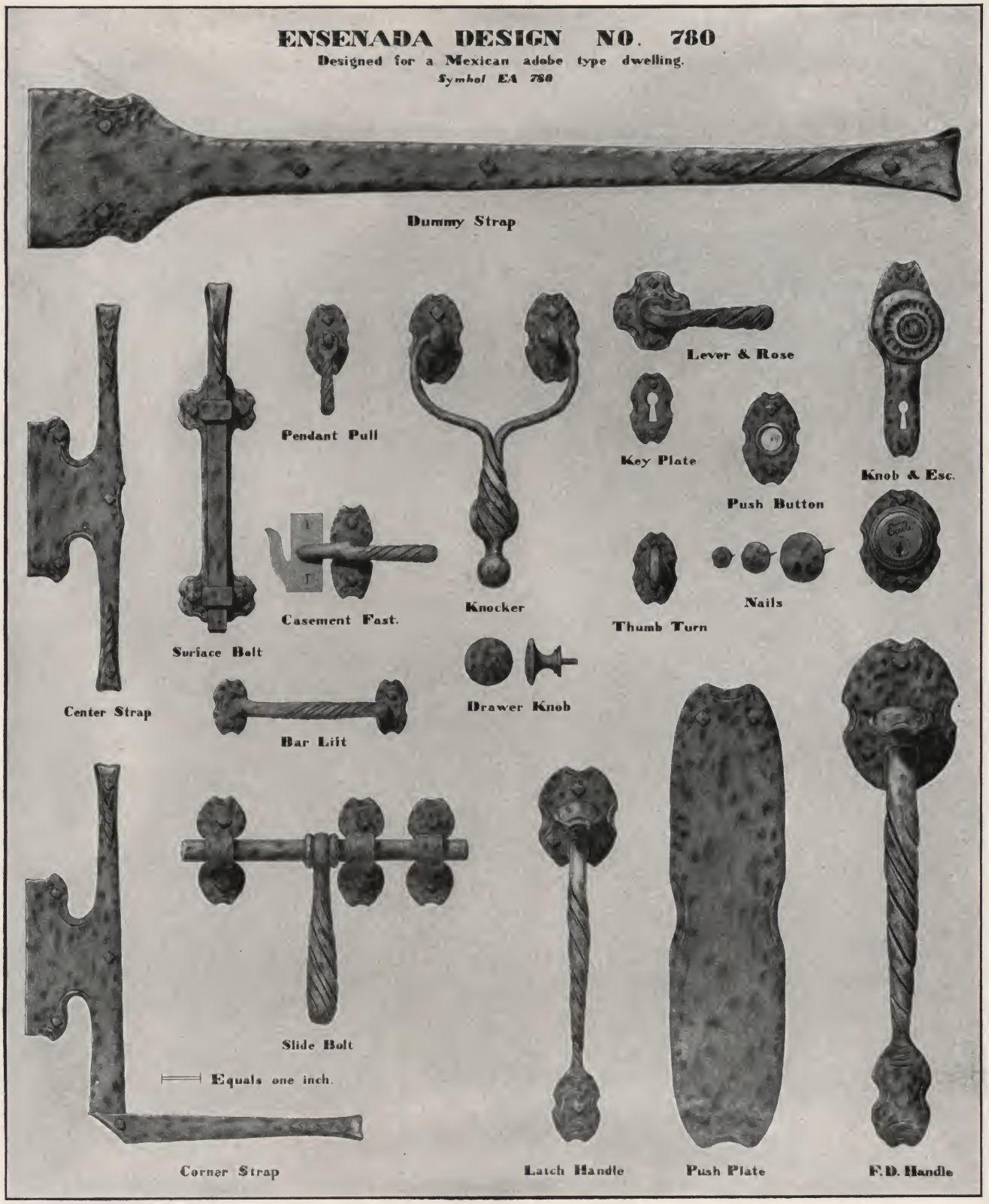
AN UNUSUAL SUITE

The scallop and spear edge accentuated with incised lines traditionally Mediterranean in feeling, enriches this hardware suite of an otherwise plain outline. We have added to this set odd pieces, such as a slide bolt, plate latch and stud generally classified as special items, feeling that items of this nature should be used, where possible, on a structure following the Spanish influence faithfully. We can furnish also cremorne bolts to match this design.



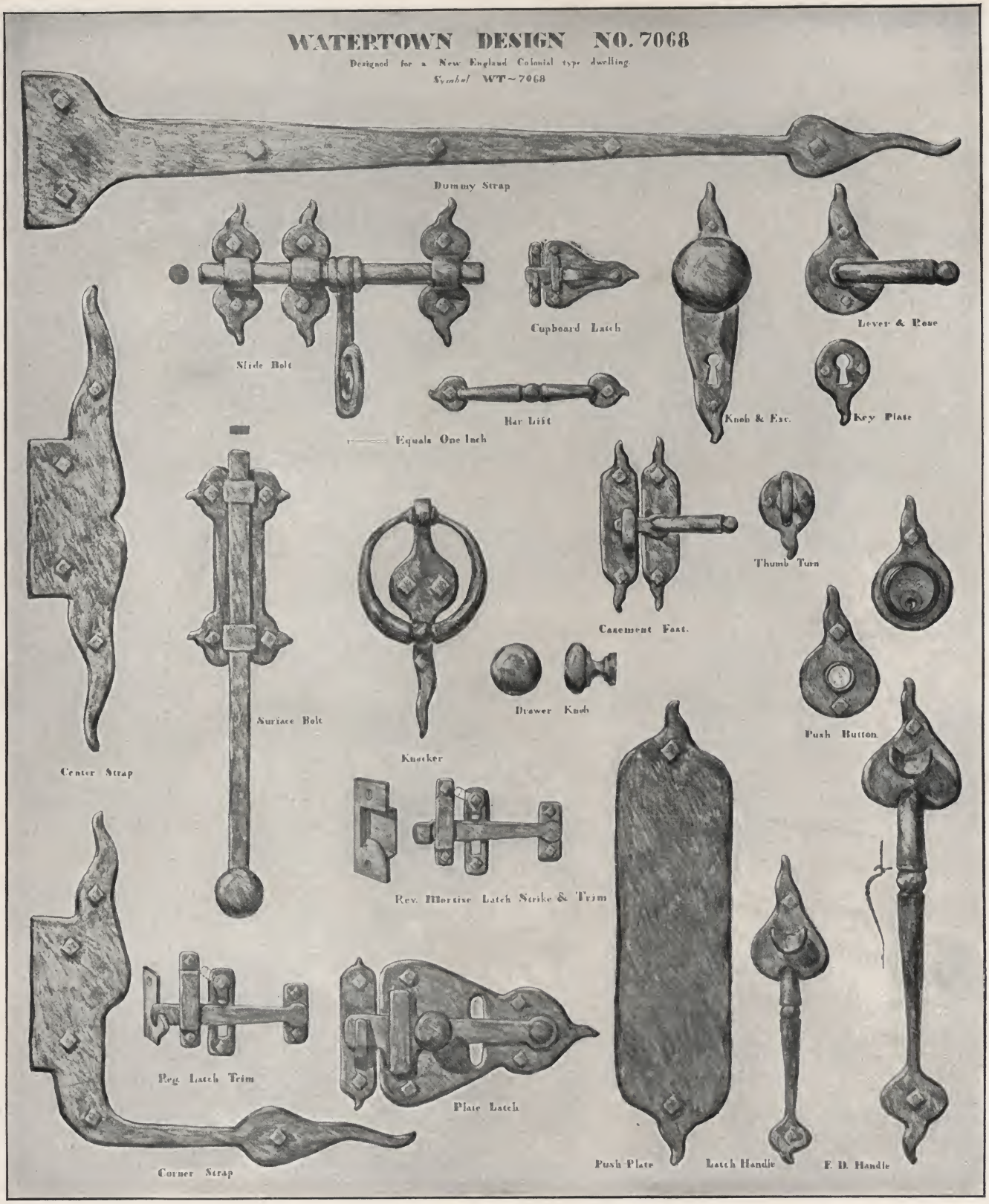
OUT OF THE ORDINARY

The Spanish design Redondo, or "round," as the English translation implies, gets its motif from an old sixteenth century lock plate embodying the scallop and dot as ornamentation. This design will be found fitting when applied to either grooved and studded plank doors, or panelled, as desired. As the suite illustrated is quite complete, suitable selection can be made for the modest "adobe" or pretentious Spanish dwelling as well.



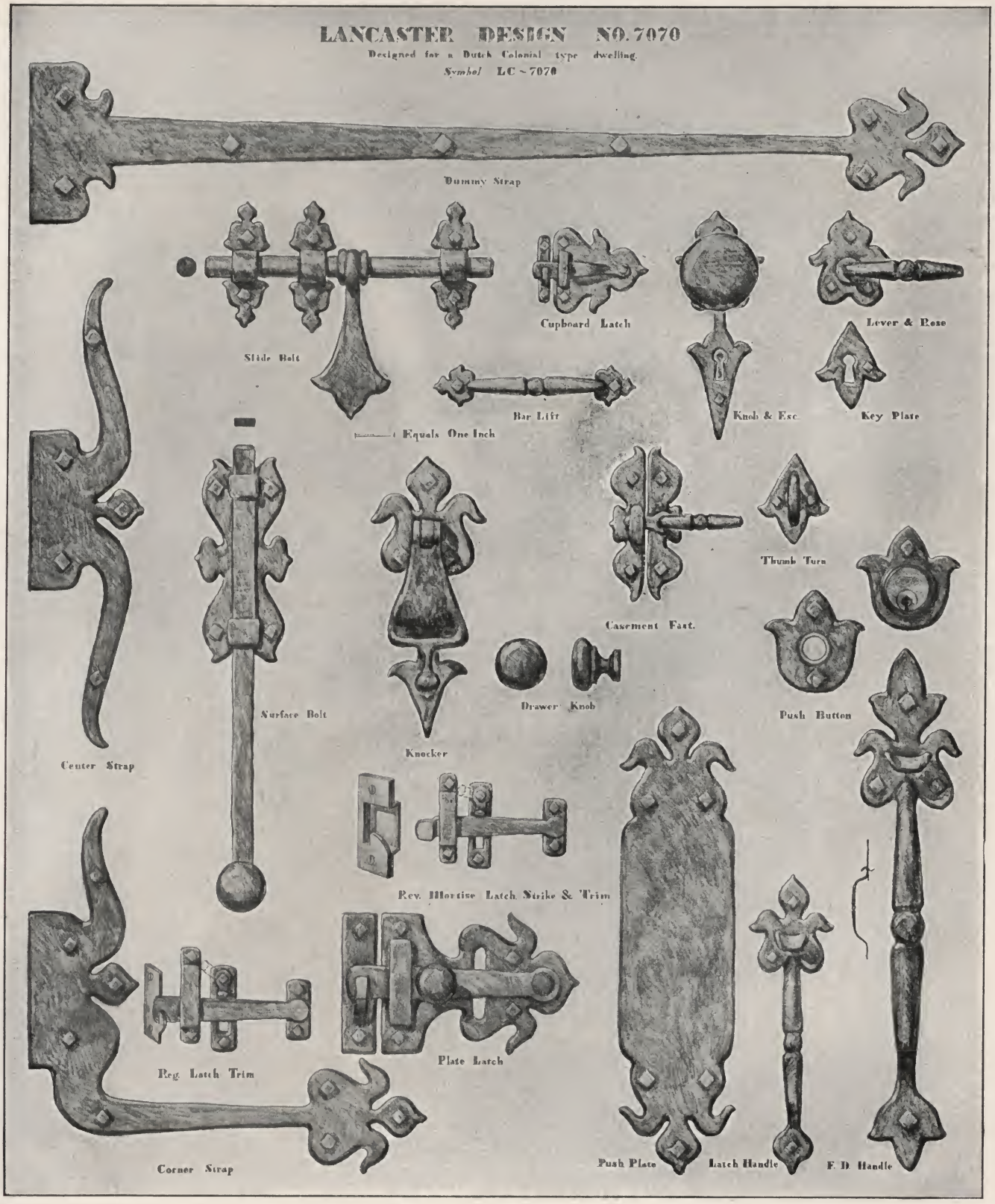
FOR THE SUNNY STATES

A primitive design, very attractive when used on rough or crudely hewn plank doors, the popular southwestern "adobe" being an example. The items are varied enough to meet the needs of most any condition and quaint enough to be classified as special.



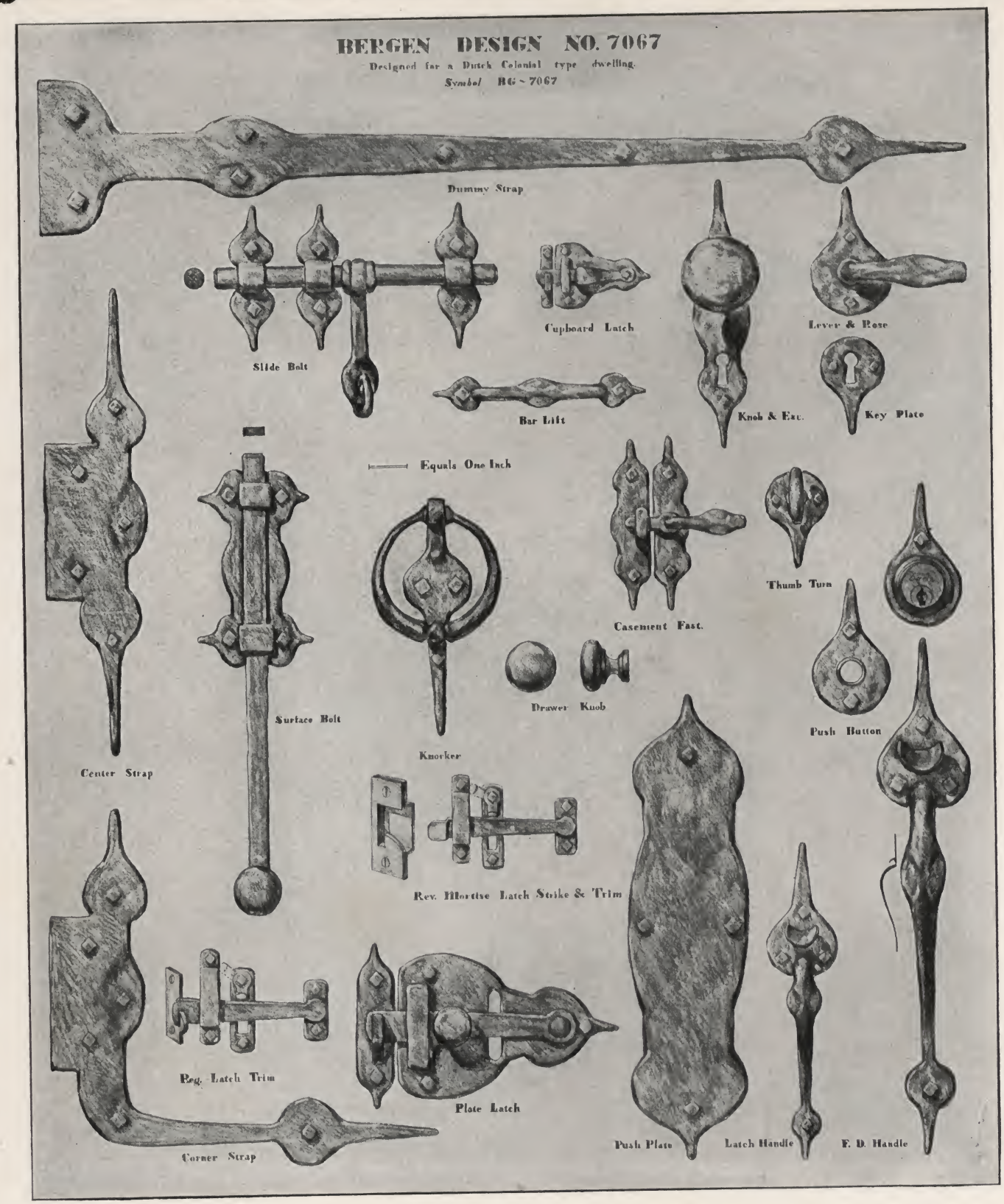
COLONIAL INSPIRATION

This residence hardware suite follows the early colonial tradition as nearly as possible with the added advantage of present day economy and ease in installation. Suggested finishes for this design are old iron, dead black and rusty iron.



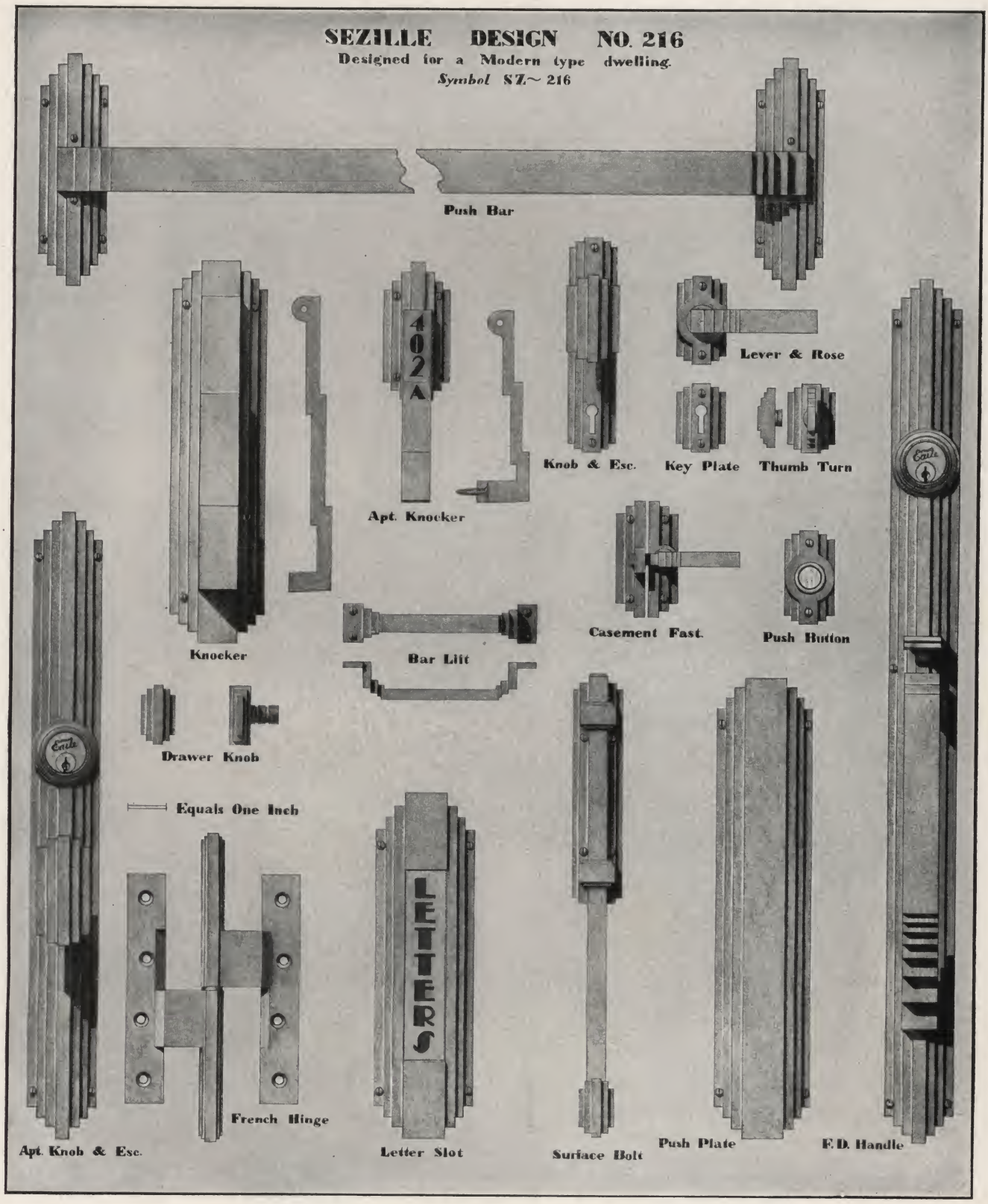
THE POPULAR TULIP MOTIF

This design was used quite extensively by the early Dutch settlers of the Colonies, especially Pennsylvania and New York. The tulip being probably the most popular flower of that time it is but natural the early craftsmen should be inspired to reproduce it in their arts.



THE FORGED POINT

A typical early Colonial pattern simple in outline but thoroughly in harmony with the Dutch Colonial home. The hammered surface and forged point is very effective in a dead black or old iron finish.



CONTEMPORARY

A design most effective when finished in a high polish, preferably the popular new chromium plate. The reflection of light and surrounding colors on the highly polished planes of this pattern is particularly pleasing and thoroughly in keeping with the modern spirit.

Distinctive Homes *with* Hardware *by* EARLE

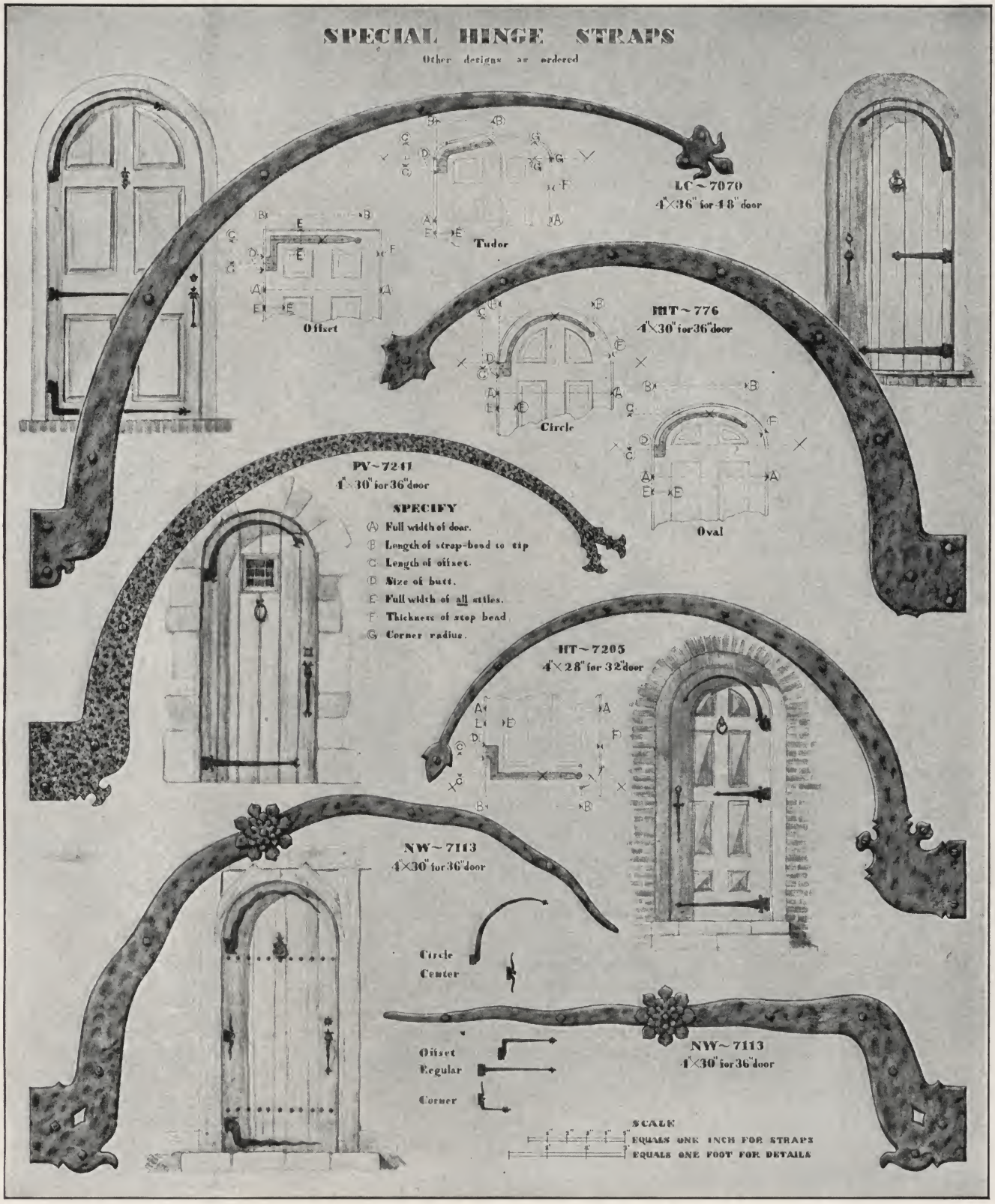


A Few Glimpses of the Beautiful Late Thomas H. Ince Residence. This Home Is a Perfect Example of Mexican Architecture

Roy Sheldon Price, Architect

California is noted throughout the world for its beautiful homes and environs, and though Earle Period Hardware is in use on a great many of the most outstanding buildings in California, this residence was chosen as representative of the care taken in collaborating the various arts of the building trade in order to create a harmonious home, true to type in every detail.

This residence, though built several years ago, still stands as an outstanding monument to the genius of Mr. Roy Sheldon Price, the architect, and the late Mr. Thomas H. Ince who had the vision and foresight to allow Mr. Price free hand in the creating of this masterpiece.

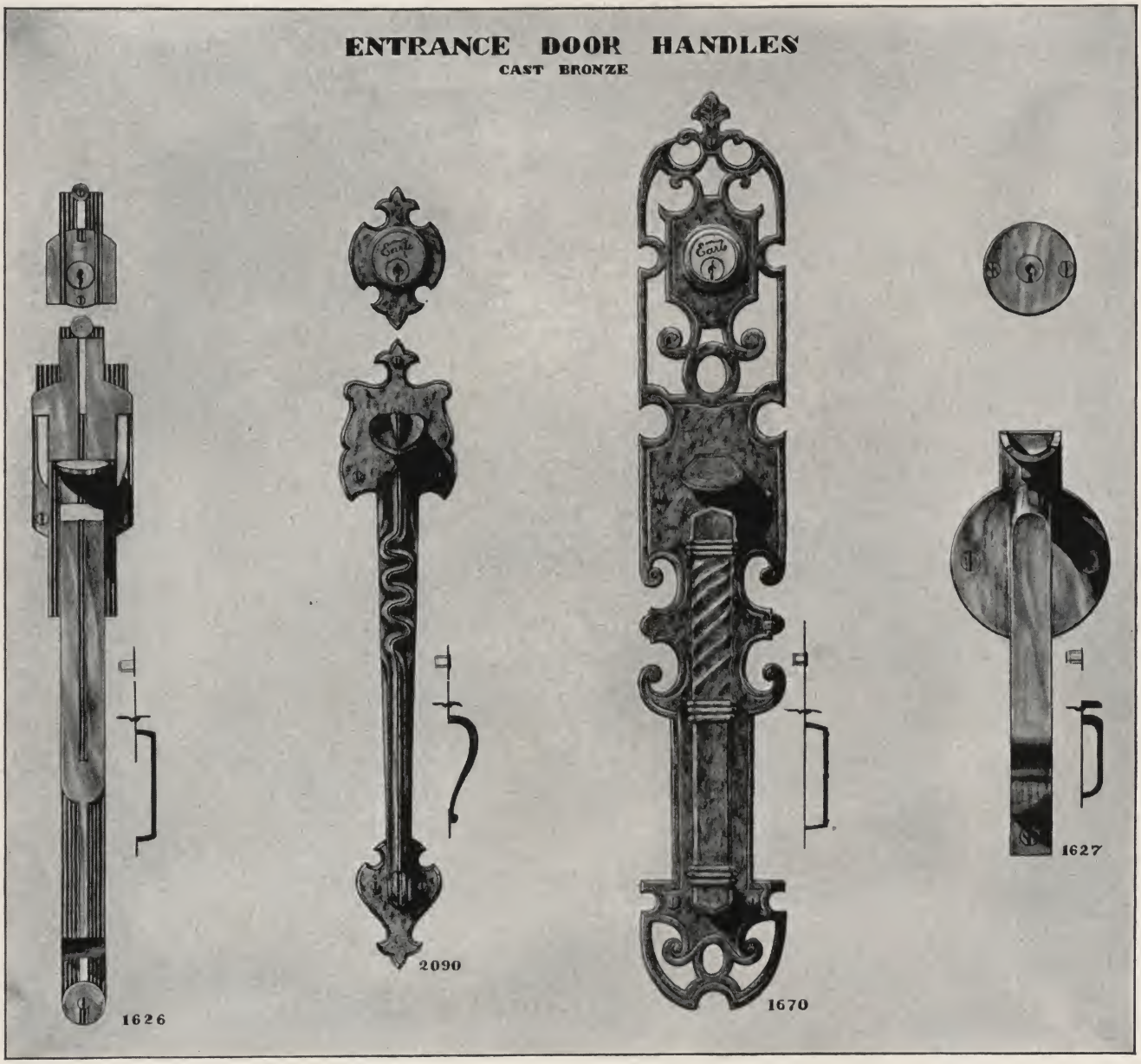


INFORMATION

Architects and builders will find the information and suggestions illustrated on this page invaluable in the ordering of special shaped straps to conform with doors requiring odd treatment. While this information has practically eliminated errors in filling of orders, it is advisable when ordering hinge straps to fit a peculiar shaped door to supply us with a full size detail showing the necessary information, such as hand of door, etc.

ENTRANCE DOOR HANDLES

CAST BRONZE



THE FIRST IMPRESSION

A correctly trimmed front door truly represents the first impression one has of the style of a building. It may also represent to a great extent the character of the occupant as well. For the observer will note in passing along the average residential street, forbidding doors, cordial doors, extravagant doors, sedate doors, in fact doors displaying every characteristic inherent in man. This may very well be so, for man's possessions but reflect his character and attitude toward life and his fellow man.

The handles listed above represent but a few of the many designs we manufacture. Nos. 1626 and 1627 are contemporary, No. 2090 is classed as English while No. 1670 reflects Mediterranean influence.

COMPLETE SETS WITH LOCK AND INSIDE TRIM

Set No.	Lock	Handle	Inside Trim	Size overall
1626x9744	9000	1626	Wrought bronze knob 74¼ and rose x turn knob	18½x2¼
2090x9744	9000	2090	Wrought bronze knob 74¼ and rose x turn knob	18¼x2⅝
1670x9744	9000	1670	Wrought bronze knob 74¼ and rose x turn knob	20¼x3¼
1627x9744	9000	1627	Wrought bronze knob 74¼ and rose x turn knob	14 x3½

THREE FRONT DOOR HARDWARE SETS

Designed for use on slab doors.

NO. 638 NO. 639 NO. 640



Dummy Strap





F. D. Handle

Push Button



Knocker

Richly decorative this design achieves a good effect on a heavily constructed entrance.

NO. 640



Dummy Center Strap



Dummy Center Strap



Push Button

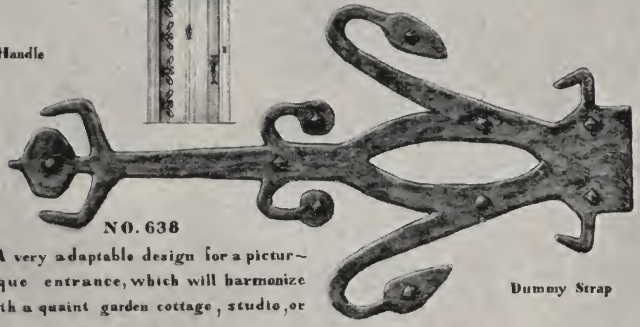


Knocker





F. D. Handle



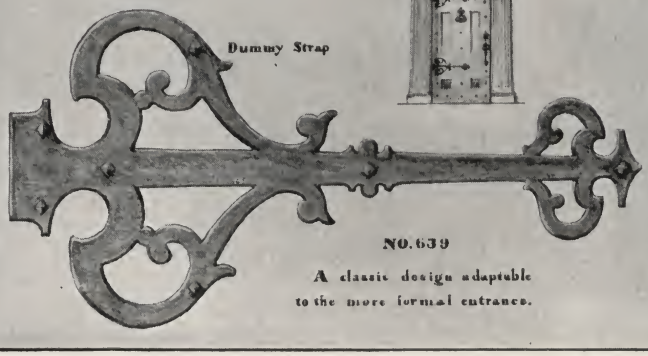
NO. 638

A very adaptable design for a picturesque entrance, which will harmonize with a quaint garden cottage, studio, or the simple modern door.

Dummy Strap

Equals Six Inches 0" 1" 2" 3" 4" 5" 6"





Dummy Strap

NO. 639

A classic design adaptable to the more formal entrance.



F. D. Handle



Push Button





Knocker



Dummy Center Strap

FOR MASSIVE DOORS

Due to many requests for individual entrance sets suitable for the modern plank or panelled doors these designs were created. The illustrations showing their use on typical doors, convey an idea of their beauty and adaptability. Furnished in cast brass, bronze, white bronze or wrought iron, and finished in old brass, old bronze, half polished old iron and dead black. Other finishes if desired.

FRONT DOOR & INSIDE LOCK SETS

BLANDON *Symbol* BD
MODERN

CARLTON *Symbol* CT
GEORGIAN



1¼"× 7"
Esc. BD 71 Wrought
Glass knob 153



2½"× 11"
Esc. BD 711 Cast bronze
Knob BD 77¼ Cast bronze



1¼"× 7"
Esc. BD 77 Cast bronze
Knob BD 77½ Cast bronze

FOR FURTHER INFORMATION SEE FOLLOWING PAGE



1⅝"× 6½"
Esc. CT 71 Wrought
Glass knob 132



2¼"× 11¾"
Esc. CT 711¾ Cast bronze
Knob CT 77¼ Cast bronze



1⅝"× 6½"
Esc. CT 71 Wrought
Knob CT 74½ Wrought

BLANDON DESIGN (SYMBOL BD) CYLINDER F.D. SET

Set No.	Lock	Knobs	Escutcheons
BD915-777½	9150	BD77¼	BD711xBD77T (cast)
BD91-777½	9100	BD77¼	BD711xBD77T (cast)
BD71-777½	7100	BD77¼	BD711xBD77T (cast)
	Inside Lock Sets with glass knobs		
BD3537	300	153 (glass)	BD71 (wrought)
BD4537	400	153 (glass)	BD71 (wrought)
	Inside Lock Sets with metal knobs		
BD47771½	401	BD77½	BD77 (cast)
BD87771½	801	BD77½	BD77 (cast)

CARLTON DESIGN (SYMBOL CT) CYLINDER F.D. SET

Set No.	Lock	Knobs	Escutcheons
CT915-777½	9150	CT77¼	CT711¾xCT71T (wrought)
CT91-777½	9100	CT77¼	CT711¾xCT71T (wrought)
CT71-777½	7100	CT77¼	CT711¾xCT71T (wrought)
	Inside Lock Set with glass knobs		
CT3327	300	132	CT71 (wrought)
CT4327	400	132	CT71 (wrought)
	Inside Lock Set with metal knobs		
CT47471½	401	CT74½	CT71 (wrought)
CT87471½	801	CT74½	CT71 (wrought)

DOOR KNOBS

With roses and key plates.



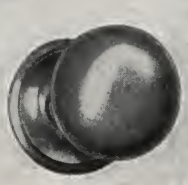


651





986





661





949





915





655





302





650



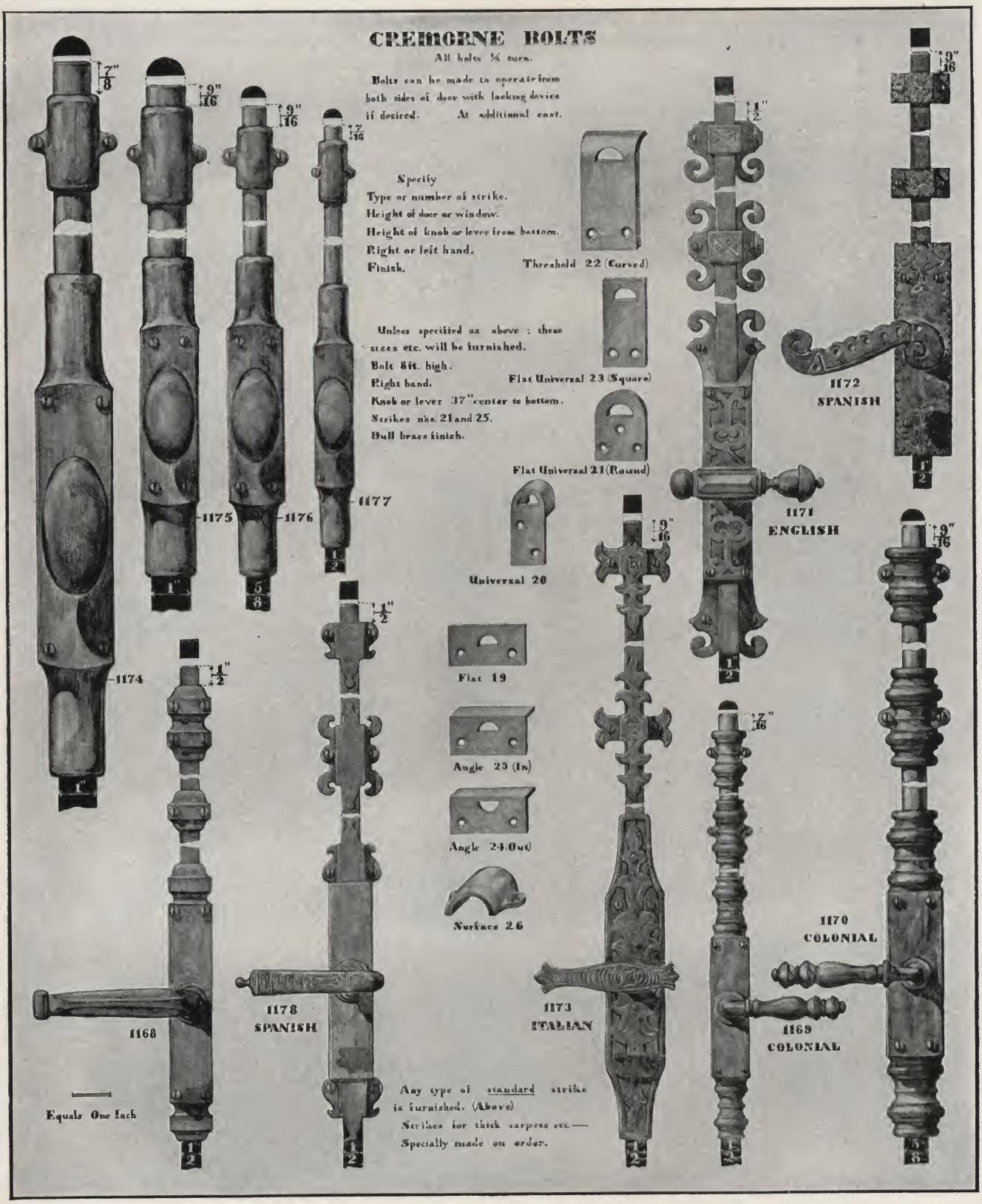


951

The Sectional Door Knob Sets shown here can be used as alternates with designs shown on previous page.

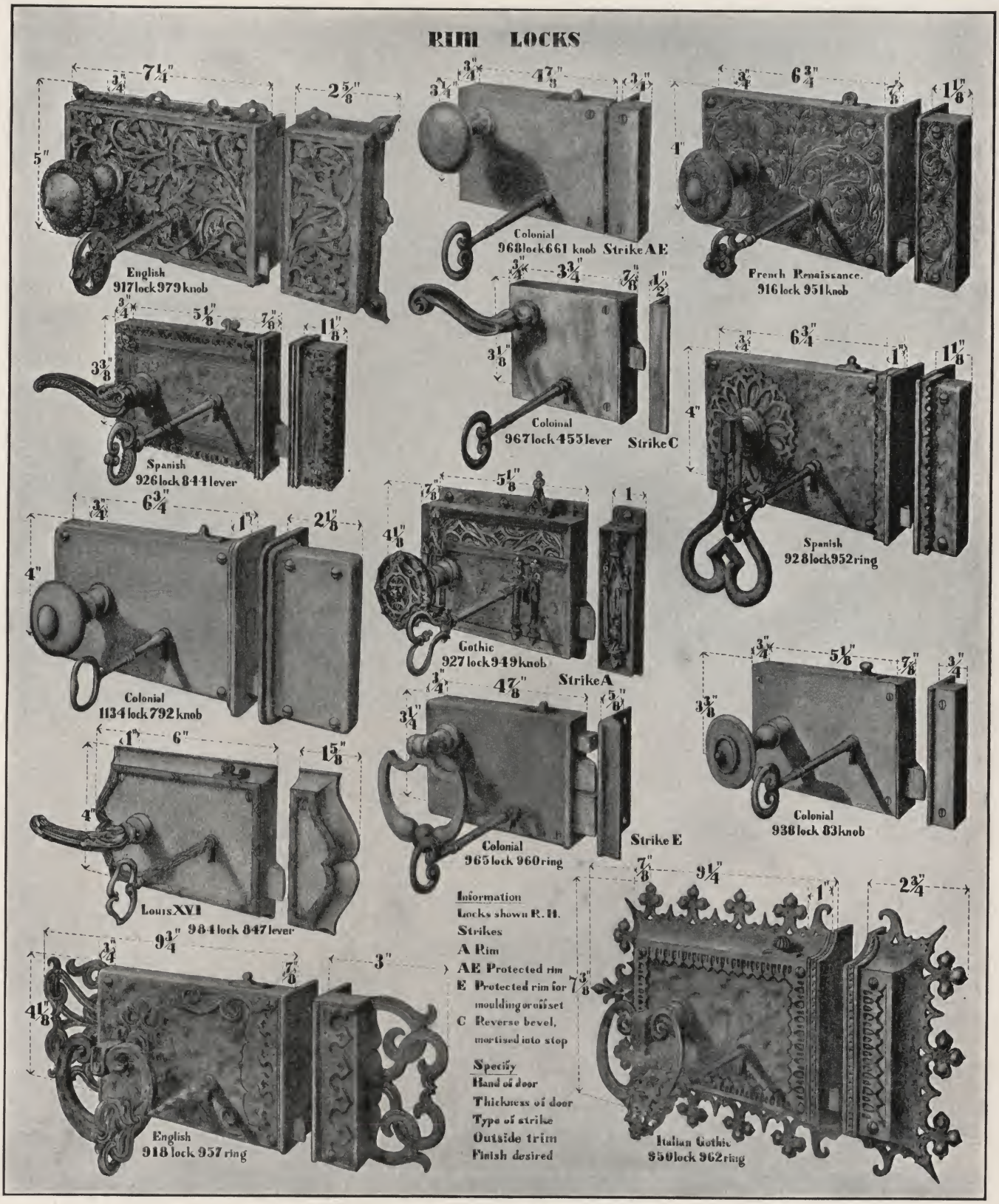
Number	Knob size	Rose size	Keyplate size	Number	Knob size	Rose size	Keyplate size
651	1⅞	1¾	1¼x2	655	2	2	1¼x2
986	1¼x2¼	1¾	⅞x1⅝	650	2⅛	2⅛	1¼x2
661	1⅞	2	⅞x2½	302	1¾	1¾	1¼
915	1⅞	2⅛	1⅛x2¼	951	2	2¼	1¼x2⅛
949	2¼	1¼x3¾	1x2¾				

Any finish desired.



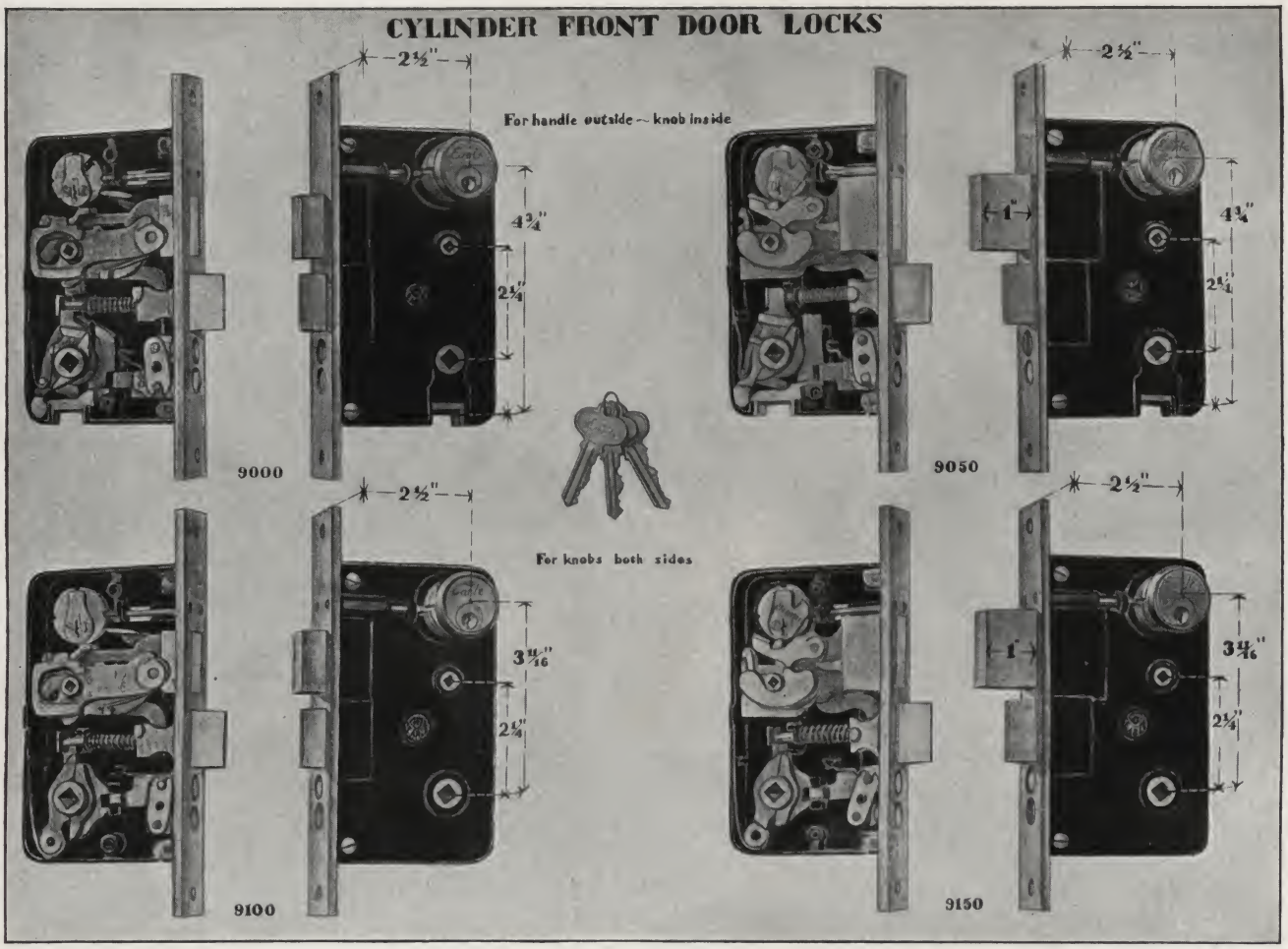
Number	Size of case	Width, guides	Rod size	Material	Number	Size of case	Width, guides	Rod size	Material
1168	7¼x1⅛	1 3/16	½ square	Bronze	1174	12 x2	2⅜	1 half round	Bronze
1169	6¾x1	1⅛	½ half round	Bronze	1175	8¼x1½	2 1/16	1 half round	Bronze
1170	8½x1½	1⅞	⅝ half round	Bronze	1176	8¼x1½	1¾	⅝ half round	Bronze
1171	9 x1¼	2	½ square	Bronze	1177	6⅞x1	1⅛	½ half round	Bronze
1172	5½x1½	1½	½ square	Bronze	1178	8⅜x1⅝	1¾	½ square	Bronze
1173	8½x1½	2	½ square	Bronze					

Nos. 1171, 1172 and 1173 also made in wrought iron if desired.



VERY ORNAMENTAL

Earle for many years made a study of rim locks both ancient and modern, and offers a selection of period rim locks for most every requirement. Complete set consists of lock shown, and trim for opposite side of door. On double doors it is often desirable to use rim locks in pairs—particularly in French or Colonial periods, one active the other dummy. Above locks also made to operate for cylinder outside and turn knob inside if desired. Special rim locks made to order in any metal.



For a lighter Cylinder Lock than Nos. 9000 and 9100 substitute Nos. 7000 and 7100, having a front 1x7¾ in. The above locks also furnished with two cylinders for store door use—specify Nos. 9201 or 7201 as desired. Our limited amount of space in this catalogue does not permit the listing of all the items we manufacture. Information relative to other items can be had from our representative or by communicating with the factory direct.

ONE BRONZE CYLINDER—3 KEYS. UNLIMITED NUMBER OF CHANGES

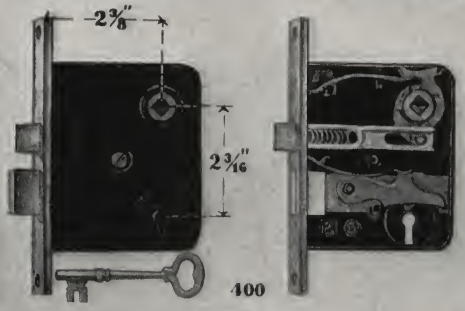
Number	Front	Case	Hubs
9000 Cyl. F. D. Lock	Cast brze. 1¼x8	Cast iron 5⅞x3½	Bronze
9100 Cyl. F. D. Lock	Cast brze. 1¼x8	Cast iron 5⅞x3½	Bronze
9050 Cyl. F. D. Lock	Cast brze. 1¼x8	Cast iron 5⅞x3½	Bronze
9150 Cyl. F. D. Lock	Cast brze. 1¼x8	Cast iron 5⅞x3½	Bronze

Locks 9050 and 9150 have extra heavy bolts, with 1-in. throw on the dead bolt, operated by a single revolution of the key in the cylinder.

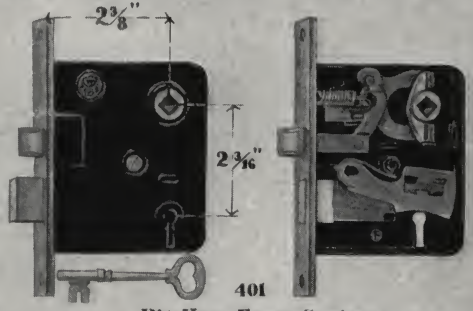
INDIVIDUAL HARDWARE FOR THE PRETENTIOUS OR MODEST HOME

INSIDE MORTISE LOCKS

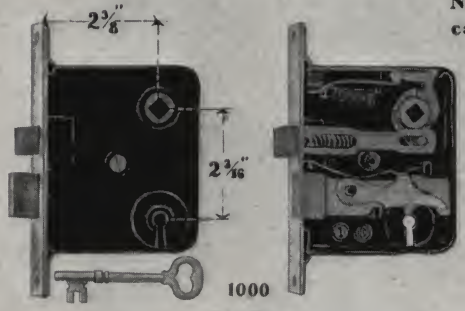
Reversible



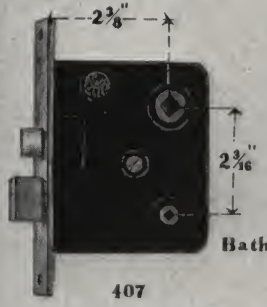
400
Bit Key



401
Bit Key Easy Spring
No. 403 same with three tumblers, can be master keyed.

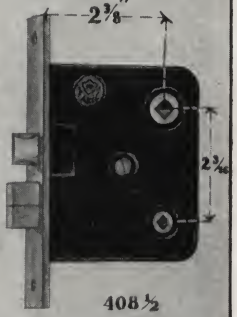


1000
Bit Key



Bathroom

407
No. 408 same as 407 but with bronze hubs, and easy spring chamfered latch bolt.



Communicating

408½

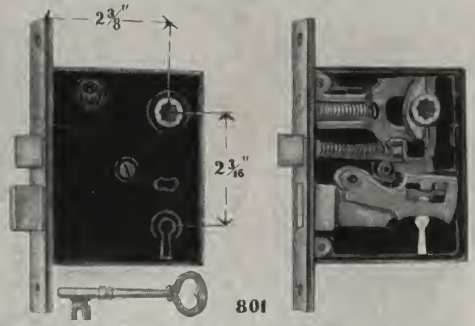
As locks are quite a standard item with all hardware manufacturers and trim quite the reverse we decided to present in this catalogue as many period designs as possible in the space allowed. The locks listed in this catalogue are hand fitted, and particularly designed to be used with Earle Period Hardware and are guaranteed to give complete satisfaction when properly used. Other locks not shown here can be found in our stock hardware catalogue.

Number	Front Cast bronze	Case	Hub	Tumblers	Changes
400 Inside Mortise lock	⅞x5¼	3⅝x3¼	Iron	1	12
401 Inside Mortise lock	⅞x5¼	3⅝x3¼	Brze.	1	24
403 Inside Mortise lock	⅞x5¼	3⅝x3¼	Brze.	3	48
407 Bath Room lock	⅞x5¼	3⅝x3¼	Iron		
408 Bath Room lock	⅞x5¼	3⅝x3¼	Brze.		
408½ Communicating lock	⅞x5¼	3⅝x3¼	Brze.		
1000 Inside Mortise lock	Wrought steel, ⅞x5¼	3½x3¼	Iron	1	12

WE SPECIALIZE IN CHURCH, LODGE AND THEATER HARDWARE

INSIDE MORTISE LOCKS AND LATCHES

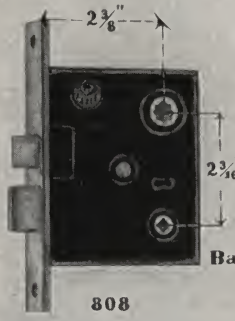
Reversible



801

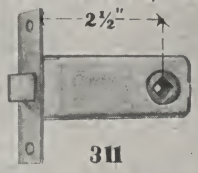
Bit Key Double Compression Spring

No. 803 same with three tumblers, can be master keyed.



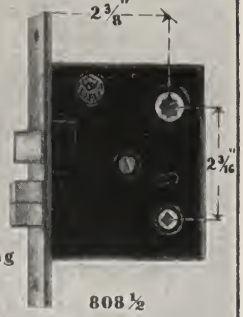
Bathroom

808



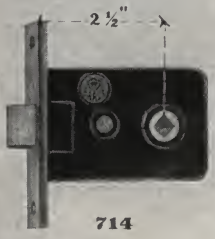
311

Wrought steel case brass plated.

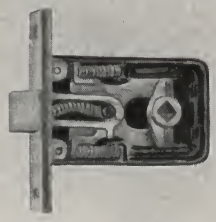


Communicating

808½

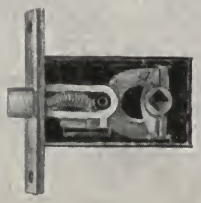


714





712



The No. 801 Inside Mortise Lock listed above embodies a new feature not found in similar type locks. This feature is the double broaching of the spindle hub, making it possible to align an oval or ornamental knob, or a lever with the escutcheon. This simple arrangement together with our special compression spring makes it possible to hang lever handles in the proper position and obviates the necessity of extra auxiliary springs, as a pair of heavy levers can be held in position quite easily when using this lock.

Number	Front	Case	Hub	Tumblers
801 Inside mortise lock	Cast bronze 1x5⅝	Cast iron 3¾x3⅛	Bronze	One (steel)
803 Inside mortise lock	Cast bronze 1x5⅝	Cast iron 3¾x3⅛	Bronze	Three (steel)
808 Bath room lock	Cast bronze 1x5⅝	Cast iron 3¾x3⅛	Bronze	
808½ Communicating lock	Cast bronze 1x5⅝	Cast iron 3¾x3⅛	Bronze	
311 Mortise latch	Wrought steel ⅞x3	Wrought steel 3x1⅛	Iron	
714 Mortise latch	Cast bronze 1x3⅞	Cast iron 3⅜x2¼	Bronze	
712 Mortise latch	Cast bronze ⅞x3½	Cast iron 3⅜x1¾	Iron	

LOCK SETS FOR STORES, GARAGES, ETC.

Hinges and Hinge Plates

Colonial H & L



One Pair
No. 803



Half Pair
No. 804

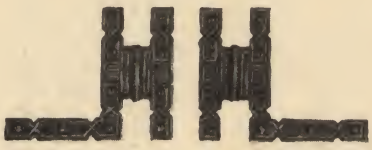


Half Pair
No. 806



One Pair
No. 805

Spanish



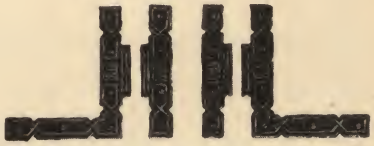
No. 816



No. 817

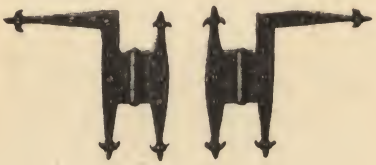


No. 819



No. 818

English



No. 886



No. 887



No. 889



No. 888

SIZES OF ABOVE HINGES

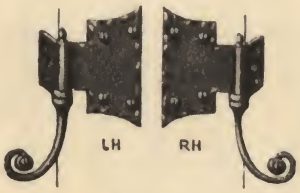
Size 2" Butt 5/8"x4"x3"
" 2½" " 3/4"x5"x4"

Butt 2" —5/8"x4"
" 2½"—3/4"x5"

Butt 2" —5/8"x4"
" 2½"—3/4"x5"

2" Butt 5/8"x4"x3"
2½" " 3/4"x5"x4"

Colonial Rat Tail Hinges, Reversible



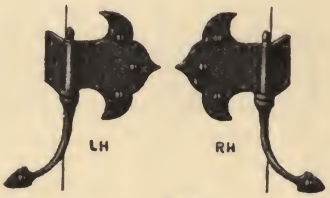
No. 832
Size 1½" Butt 3"x2" Blade



Section showing installation of hinge, right hand



To reverse—assemble surface blade and tail pintle in opposite positions

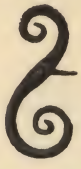


No. 833
Size 1½" Butt 3"x2½" Blade

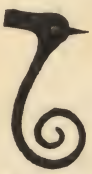
Colonial Shutter and Blind Holders



No. 389
Size 5½"



No. 392
Size 6"



No. 385
Size 6½"



No. 393
Size 7½"

INFORMATION

The popular H & L Hinge shown above while listed in only two sizes for cabinets, etc., can also be furnished in larger sizes for regular inside doors. In order to be sure of the size required, please note information and details concerning the ordering of offset hinges shown on page 18. Made in genuine hand wrought iron, cast brass, bronze or white bronze and finished in black, half polished or rusty iron and aged brass or bronze. Shutter and blind holders also made in cast iron, finished as desired.

Period Hardware

by

Earle



ORGANIZED 1871 INCORPORATED 1885

CHICAGO SPRING HINGE COMPANY

Spring Hinges and Pivots

GENERAL OFFICES AND WORKS
1500-1502 Carroll Avenue
CHICAGO, ILL.
TELEPHONE, Monroe 6868, 6869

EASTERN OFFICE AND WAREHOUSE
109 Lafayette Street
NEW YORK, N. Y.
TELEPHONE, CAnal 6-2676

Products

Manufacturers of a complete line of SPRING HINGES, including "Chicago" Spring and Springless Butt-hinges; "Triplex" and "Simplex" Spring Butt-hinges; "Relax," "Premier," "Ajax," "Durex" Spring Pivot-hinges; "Triplex" and "Sagless" Lavatory Door Spring Hinges; Lavatory Door Bolts, Latches and Stops; "Triplex" Gate Spring Butt-hinges; "Sagless" Gate Spring Pivot-hinges; "Sanitex" Closet Seat Spring Hinges; "Chicago" Cabinet and Refrigerator Spring Hinges.

TRADE CHICAGO MARK
SPRING HINGES
(Registered U. S. Pat. Office)

Specifications

In specifying, designate article by number, size and finish. Hardware dealers have our catalogue, prices and complete data pertaining to the "Chicago" spring hinge products. Hinges are made of steel, brass or bronze metal, in standard sizes and all standard finishes.

Any special finish to match other hardware, can be furnished promptly.

Specially Constructed Products

We solicit details of conditions which require special construction of our products.

Quality and Prices

The quality has been recognized for many years and the product considered as standard.

Prices are comparative with those for articles of similar type and quality.

"Triplex" Spring Butt-hinges—Double Acting, Type 2001; Single Acting, Type 2002

Hanging strip required.

The Chicago "Triplex" (Three Leaf) spring butt-hinge requires a hanging strip for applying it to door casing. One flange is mortised into the hanging strip and the other into the door, which gives a uniform appearance and secure application.

The body is made from one piece of metal, formed with multiple thickness in the web and there is no joint where the barrel continues as the web. This gives maximum of strength and rigidity and avoids exposing springs to moisture which would cause rust and breakage.

The broad steel bearings, hardened lug bushings and disassemblement features are characteristics of this product. Springs are made of the best tempered steel wire, in ample proportions for the most excessive requirements.

Single acting hinges, when so specified, can be furnished with reverse-action springs to hold door open.

This type of hinge is also made with wide web and flanges, to clear handrail on office gates. (Type G2001 double acting and Type G2002 single acting.)

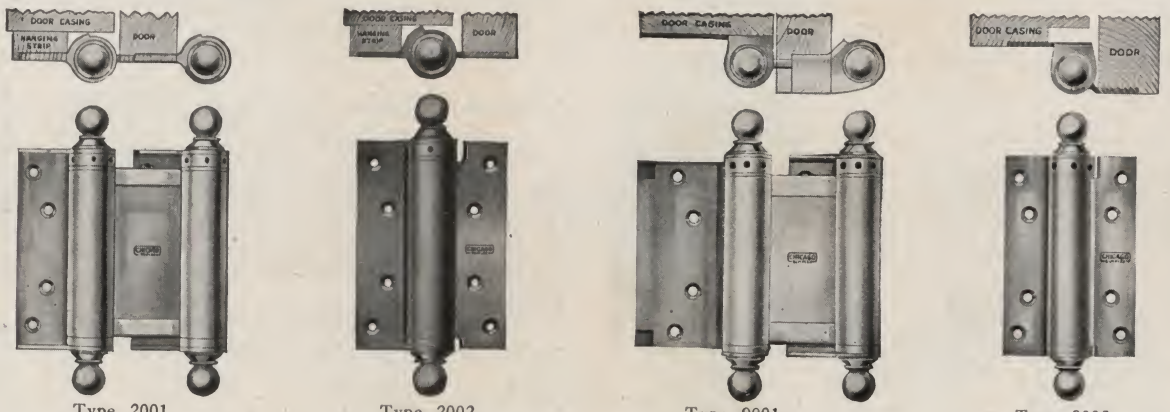
"Simplex" Spring Butt-hinges—Double Acting, Type 9001; Single Acting, Type 9002

No hanging strip required.

The Chicago "Simplex" (Simple Application) spring butt-hinge is applied to the surface of door casing without a hanging strip, the entire thickness of the hinge being mortised into the door. This method of application is simple and economical. The single acting hinge may be applied with one flange mortised into the casing and the other into the door.

The web between the barrels is straight, which gives strength, balanced strain and uniform appearance.

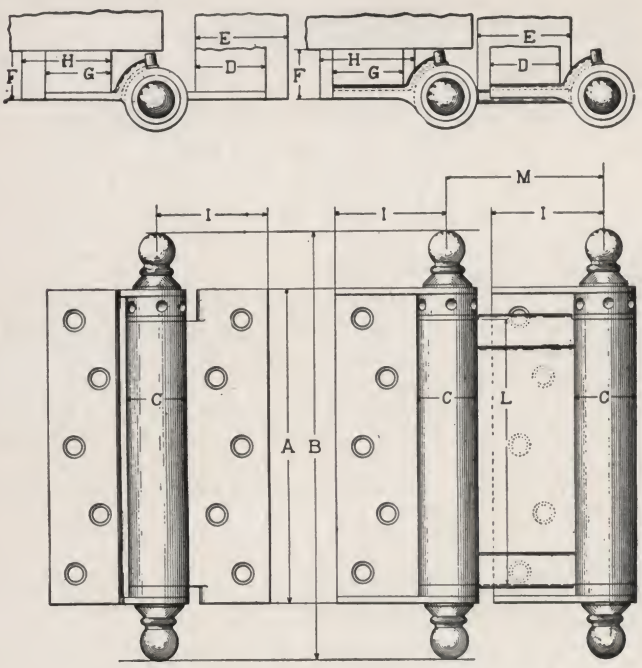
A feature, of great importance, is that all the standards of the "Triplex" spring hinge, which have been recognized for many years, have been maintained in the "Simplex" spring hinge. The body made from one piece of metal formed with multiple thickness in the web and no joint where the barrel continues as the web, distance between the axial centers, location of screw holes, length of mortise cut, size of springs and barrels, straight web, etc., all are identical with the "Triplex," which has been recognized for superior construction and quality by architects, builders and hardware dealers.



Type 2001 "Triplex" Double Acting — Type 2002 "Triplex" Single Acting — Type 9001 "Simplex" Double Acting — Type 9002 "Simplex" Single Acting

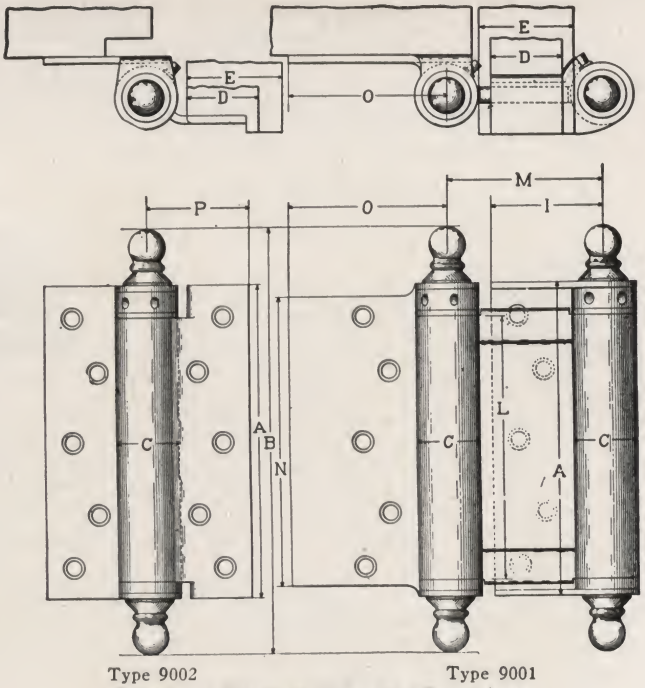
"Triplex" and "Simplex" Double and Single Acting Spring Butt-hinges

Application of proper size of hinge, according to conditions, is an essential to consider in specifying. It is advisable to avoid overloading the hinge by the selection of too small a size, thereby causing the annoyance of doors improperly operating and possible breakages. Details shown on the next page will assist in specifying "Triplex" and "Simplex" hinges. Single acting "Triplex" and "Simplex" hinges, when so specified, can be furnished with reverse-action springs to hold the door open. Supplied in steel, brass or bronze metal in standard finishes or to match other hardware



Type 2002 Type 2001

Detail of "Triplex" Spring Butt-hinge



Type 9002 Type 9001

Detail of "Simplex" Spring Butt-hinge

Dimensions in Inches

Single Acting Type 2002									Double Acting Type 2001										
A	B	C	D	E	F	G	H	I	A	B	C	D	E	F	G	H	I	L	M
3	4 1/2	55/64	3/4	1	5/8	3/4	1	1 9/32	3	4 1/2	55/64	3/4	1	5/8	3/4	1	1 9/32	25/16	1 7/8
4	5 1/2	57/64	7/8	1 1/4	5/8	7/8	1 1/4	1 3/8	4	5 1/2	57/64	7/8	1 1/4	5/8	7/8	1 1/4	1 3/8	3 21/64	2 1/8
5	6 3/4	63/64	1 1/8	1 1/2	3/4	1 1/8	1 1/2	1 25/32	5	6 3/4	63/64	1 1/8	1 1/2	3/4	1 1/8	1 1/2	1 25/32	4 13/64	2 1/2
6	8 1/8	1 3/32	1 1/4	1 3/4	7/8	1 1/4	1 3/4	1 7/8	6	8 1/8	1 3/32	1 1/4	1 3/4	7/8	1 1/4	1 3/4	1 7/8	5 9/64	2 13/16
7	9 1/4	1 7/32	1 3/8	2	1	1 3/8	2	2 3/16	7	9 1/4	1 7/32	1 3/8	2	1	1 3/8	2	2 3/16	5 61/64	3
8	10 5/8	1 3/8	1 1/2	2 1/4	1 1/8	1 1/2	2 1/4	2 9/16	8	10 5/8	1 3/8	1 1/2	2 1/4	1 1/8	1 1/2	2 1/4	2 9/16	6 23/32	3 15/32
10	13 1/8	1 7/64	1 3/4	2 3/4	1 1/4	1 3/4	2 3/4	2 25/32	10	13 1/8	1 7/64	1 3/4	2 1/2	1 1/4	1 3/4	2 1/2	2 25/32	8 5/8	3 13/16
12	15 1/4	1 3/4	2 1/4	3	1 3/8	2 1/4	3	3 3/8	12	15 1/4	1 3/4	2 1/4	3	1 3/8	2 1/4	3	3 3/8	10 1/2	4 13/16

Dimensions in Inches

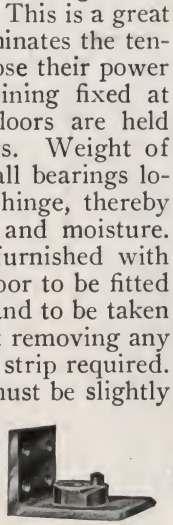
*Single Acting Type 9002						Double Acting Type 9001									
A	B	C	D	E	P	A	B	C	D	E	I	L	M	N	O
3	4 9/16	55/64	3/4	1	1 13/64	3	4 17/32	55/64	3/4	1	1 9/16	25/16	1 7/8	2 5/8	1 29/32
4	5 5/8	57/64	7/8	1 1/4	1 9/32	4	5 1/2	57/64	7/8	1 1/4	1 3/8	3 21/64	2 1/8	3 19/32	2 9/32
5	6 3/4	63/64	1 1/8	1 1/2	1 5/8	5	6 3/4	63/64	1 1/8	1 1/2	1 25/32	4 13/64	2 1/2	4 17/32	2 17/32
6	8 5/16	1 3/32	1 1/4	1 3/4	1 23/32	6	8 1/8	1 3/32	1 1/4	1 3/4	1 7/8	5 9/64	2 13/16	5 1/2	2 15/16
7	9 9/32	1 7/32	1 3/8	1 7/8	2	7	9 1/4	1 7/32	1 3/8	1 7/8	2 3/16	5 61/64	3	6 1/2	3 1/8
8	10 11/16	1 3/8	1 1/2	2	2 25/64	8	10 5/8	1 3/8	1 1/2	2	2 9/16	6 23/32	3 15/16	7 7/16	3 5/8
10	13 1/8	1 37/64	1 3/4	2 1/4	2 9/16	10	13 1/8	1 37/64	1 3/4	2 1/4	2 25/32	8 5/8	3 15/16	9 1/4	4 1/8

*Single acting, Type 9002, may be applied with one flange mortised into casing and the other into the door.

Chicago "Relax" Spring Pivot-hinges—Double Acting, Type 6001

The Chicago "Relax" spring pivot-hinge is suitable for highest class requirements. It is applied to surface of floor, thereby avoiding cutting and possible interference with girders or iron beams. The tension is adjustable. The spring action is readily disengaged by a lever, allowing door to be placed open at any desired position. This is a great convenience, and eliminates the tendency of springs to lose their power as a result of remaining fixed at high tension when doors are held open by door holders. Weight of door is carried on ball bearings located in the top of hinge, thereby protected from dirt and moisture. Plunger top pivot, furnished with this hinge, permits door to be fitted closely to top casing and to be taken down readily without removing any screws. No hanging strip required. Jamb edge of door must be slightly rounded. For tile or concrete floors specify jamb attaching plates.

Furnished in three sizes, for doors 1⅛ to 1½ in., 1½ to 2 in. and 1¾ to 2¾ in.



Jamb Attaching Plate



Type 6001

Chicago "Relax" Spring Pivot-hinge

Chicago "Premier" Spring Pivot-hinges—Double Acting, Type 4001

The Chicago "Premier" spring pivot-hinge is applied to surface of floor. Mechanical construction eliminates the tendency of wear in bearings. Action of spring is compression and it is made of best tempered steel flat wire; tension is readily adjusted and a device is provided for aligning door. With this hinge, door will remain open if swung to 90°. No hanging strip is required. Jamb edge of door must be slightly rounded. For tile or concrete floors specify jamb attaching plates.

Furnished in two sizes, for doors 1⅛ to 1¾ in. and 1¾ to 2¾ in.



Type 4001

Chicago "Premier" Spring Pivot-hinge

"Chicago" Spring Butt-hinges—Double Acting, Type 1½

The "Chicago" spring butt-hinge is constructed in a most substantial manner. The spring power, effected by both a torsion and leverage principle, produces a positive action as well as an easy movement of the door.

General construction and mechanical action of this hinge give best results obtainable in operating doors subject to excessive and violent use.

For doors of the following thicknesses:

⅞ to 1 in.
1⅛ to 1¼ in.
1⅜ to 1½ in.
1¾ to 2 in.
2¼ to 2½ in.
2¾ to 3 in.



Type 1½

"Chicago" Spring Butt-hinge

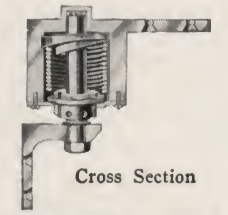
Chicago "Sagless" Gate Spring Pivot-hinges, Type 4007

The Chicago "Sagless" gate spring pivot-hinge is the pivot type, and if the gate is wide or heavy, it can not sag. The weight of the gate is carried on ball bearings and is not supported by the spring, therefore a very light tension may be applied. Exterior tension adjustment permits use after hinge is applied. Convex lock washer forms a ball and socket adjustment which automatically aligns hinge pintle.

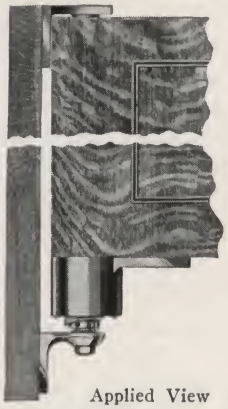
An adjustable pintle, with locking device, permits setting the gate or door to remain at rest in any desired position. The spring is of large dimensions and made of best tempered steel flat wire. A ball bearing top socket is supplied with this hinge. The application is extremely simple and, if desired, all attachments may be applied to the surface of the post and gate without mortising. This is very desirable for metal gates.

These hinges are supplied in iron, brass or bronze metal and are suitable for gates 1⅛ to 2½ in. thick with a hand rail as wide as 2½ in.

The attaching plates of the brackets are 2¼ in. high by 1½ in. wide. Pintle center to surface of post is 1⅝ in.



Cross Section

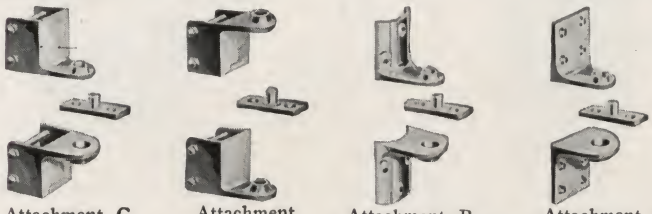


Applied View

Type 4007, Chicago "Sagless" Gate Spring Pivot-hinge

Chicago Lavatory Door Gravity Pivot-hinges, Type C47227S (Double Acting), Type C47228S (Single Acting)

In our opinion a gravity type hinge is not as adaptable to varying conditions and requirements as a spring hinge, but we manufacture gravity type hinges which in design, appearance and application are similar to Type C7227S spring hinges illustrated on this page. We believe these hinges to be equal to or better than any other gravity hinges on the market and are prepared to supply them with various types of attachments, as illustrated.



Attachment C | Attachment CI | Attachment P | Attachment F

Chicago "Triplex" Lavatory Door Spring Hinges

The Chicago "Triplex" lavatory door spring hinges, illustrated, are supplied for partition thickness as specified, in brass metal, nickelplated. White bronze (Nickeline metal) and other finishes are made to special order. The spring hinge flanges are 4 in. long.

The 2242, 2244, and 2246 hinges, illustrated below, have adjustable clamp flanges and open head nuts on bolts, permitting adjustment of ⅛ in. under and over the following sizes by which they are specified: 1, 1¼, 1½, 1¾ and 2 in.

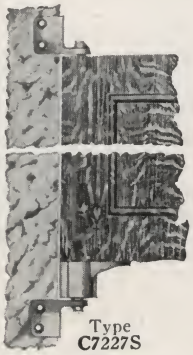
The advantage of the adjustment in clamp flange is that it can be properly and securely applied to partitions having slight variations in thickness.

Where doors are very narrow or light weight, a single acting spring hinge may be used in conjunction with a springless hinge. See Types 2244 and 2444 illustrated below. Where doors swing out and occupancy indicator is not desired, a checking springless hinge, Type 2246 or 2446 can be used. This hinge holds door ajar when not bolted shut. Where doors swing in, hinges can be furnished with reverse action springs to hold door open. Lavatory door stops similar to No. 1247F, with keeper for door bolt similar to No. 1244, can be supplied in various types to meet conditions.

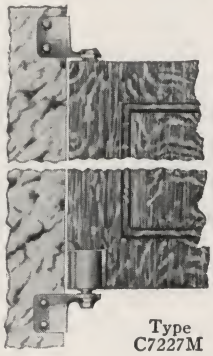
Chicago "Sagless" Lavatory Door Spring Pivot-hinges, Type C7227S and C7227M

The "Sagless" lavatory door spring pivot-hinge is made with attachments for application to marble partitions or pipe standards. The clamp Type "C" attachments are adjustable ⅛ in. under or over the following sizes by which they are specified: 1, 1¼, 1½, 1¾ and 2 in. This hinge can be used either double or single acting. An adjustable pintle with locking device permits setting the door to remain at rest in any desired position.

A larger hinge of similar type, C4227S or C4227M, with greater spring power and with exterior tension adjustment can also be furnished. This hinge is particularly adapted to double acting dwarf vestibule doors. See Type 4007 for description of features.



Type C7227S

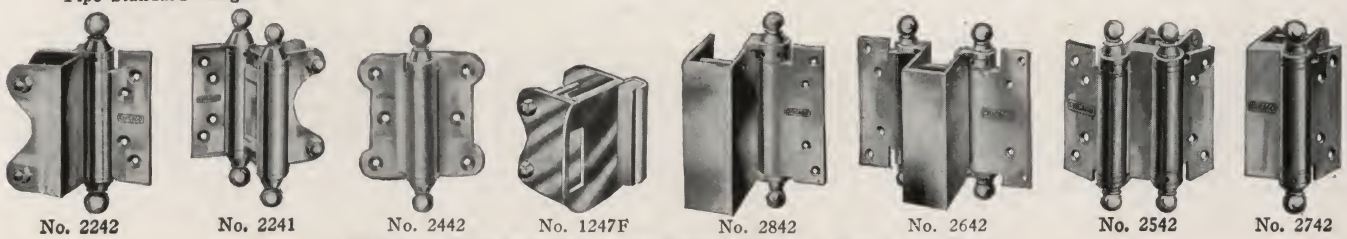


Type C7227M

Chicago "Sagless" Lavatory Spring Hinges



No. P2222 | No. I2342DD Pipe Standard Hinges | No. 2244 | No. 2246 | No. 2444 | No. 2446 | No. 1244



No. 2242 | No. 2241 | No. 2442 | No. 1247F | No. 2842 | No. 2642 | No. 2542 | No. 2742

Chicago "Triplex" Lavatory Spring Hinges, Stops and Bolts

ESTABLISHED 1876

BOMMER SPRING HINGE COMPANY

251-271 Classon Avenue
BROOKLYN, N. Y.

WESTERN SALES OFFICE, 180 North Wacker Drive, CHICAGO, ILL.
PACIFIC COAST SALES REPRESENTATIVE: John T. Rowntree, Inc., LOS ANGELES, CALIF.
BOSTON REPRESENTATIVE: Walter H. Cutler, 37 Pearl Street, BOSTON, MASS.

Products

Spring Hinges, Checking Floor Hinges, Closers and Pivots for all kinds of doors, also Strikes, Bolts, Latches and Fittings for lavatory units in office buildings, hospitals, theaters, public buildings, etc.

TRADE MARK

BOMMER

Reg. U. S. Pat. Office

The Quality and Prices of Bommer Products

Standard for over 50 years, and kept up-to-date. The superiority of Bommer Spring Hinges is officially attested by consensus of expert opinion the world over through numerous inter-nation awards of competent juries over all competitors.

Countless fine buildings throughout the world are equipped with Bommer Spring Hinges.

Prices are guaranteed to be no higher than those for goods of corresponding type.

Specifications

Architects, in specifying these products, should use the word "Bommer" and in addition thereto, specify the size and finish required.

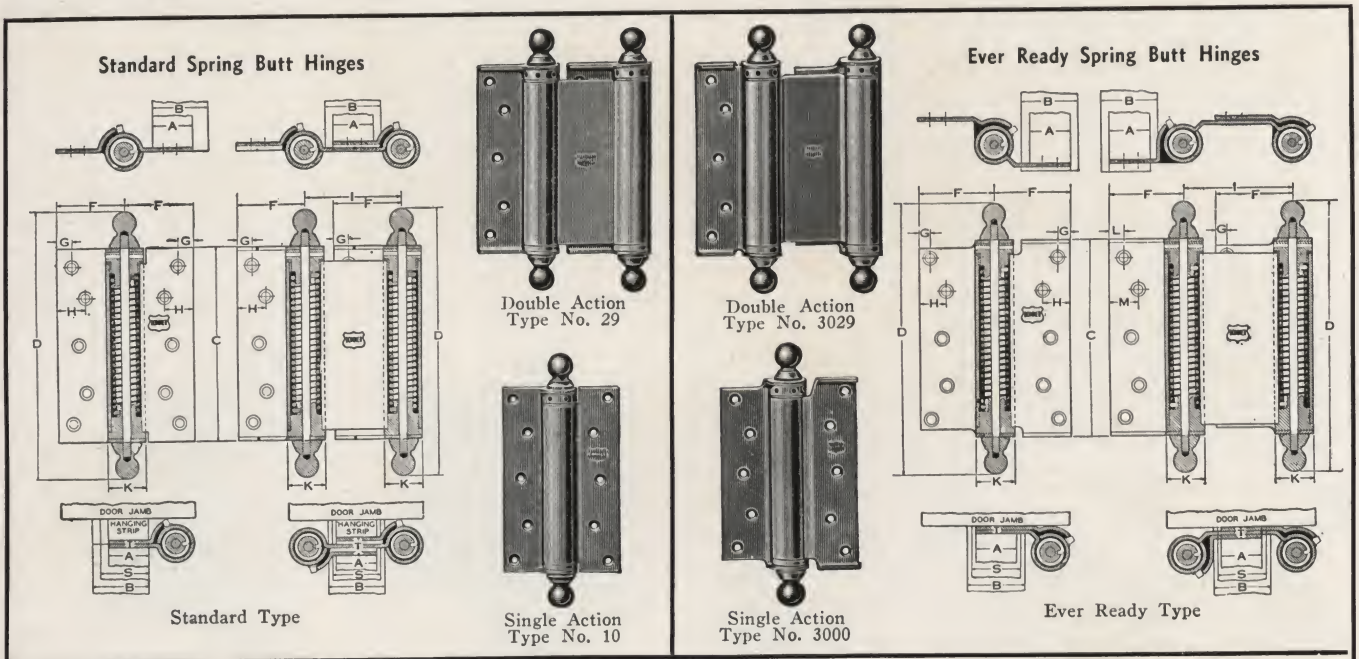
Hardware dealers and lock manufacturers can include them in their contracts.

BOMMER SPRING BUTT HINGES

Bommer Standard spring butt hinges require a hanging strip for fastening hinges to the door casing. They permit the door to be opened 180° if suitably hung. Bommer Ever Ready do not require a hanging strip and are fastened to surface of door casing.

They are made of wrought steel, bronze and brass in all finishes. Spring barrels and their connecting plate integral and exceptionally strong and of uniform thickness. Springs are of large diameter and unusual length, made of best oil tempered steel, have great resilience and power and never go lame. The pintle and flange are interlocked, preventing the ball tips from working loose.

Note: Any special finish to match other hardware can be furnished promptly.



DIMENSIONS OF STANDARD SPRING BUTT HINGES

Size of hinge, C	Width of door	Weight of door	Depth of hanging stile*	Double Action A	B	D	F	G	H	I	K	S	T	Single Action A	B	D	F	G	H	K	S	T
3″	2′-2″	30 lbs.	1/2″	3/4″	1″	4 3/8″	1 3/8″	5/16″	1/2″	2″	29/32″	7/8″	7/16″	3/4″	1″	4 3/4″	1 3/8″	5/16″	17/32″	29/32″	7/8″	11/64″
4″	2′-4″	42 lbs.	5/8″	7/8″	1 1/4″	5 1/2″	1 5/8″	5/16″	5/8″	2 3/8″	15/16″	1 1/8″	7/16″	1 1/4″	1 1/2″	5 1/2″	1 1/8″	5/16″	21/32″	15/16″	1 1/8″	11/64″
5″	2′-6″	56 lbs.	5/8″	1 1/8″	1 1/2″	6 11/16″	1 29/32″	11/32″	5/8″	2 23/32″	15/16″	1 3/8″	7/16″	1 1/2″	1 3/4″	6 11/16″	1 1/8″	5/16″	1 7/8″	1 1/16″	1 3/8″	3/16″
6″	2′-8″	72 lbs.	3/4″	1 1/4″	1 3/4″	8″	2 3/32″	5/8″	5/8″	3″	1 1/16″	1 3/8″	9/16″	1 1/2″	2″	8″	1 1/8″	5/16″	2 1/16″	1 3/16″	1 1/2″	7/32″
7″	2′-9″	90 lbs.	7/8″	1 3/8″	2″	9 5/16″	2 3/8″	5/8″	1 1/32″	3 3/8″	1 5/16″	1 3/4″	9/16″	1 3/4″	2″	9 5/16″	1 3/8″	3/8″	2 1/4″	1 5/16″	1 3/4″	15/64″
8″	2′-10″	110 lbs.	1″	1 1/2″	2 1/4″	10 5/8″	2 11/16″	3/4″	1 3/16″	3 13/16″	1 7/16″	2″	3/4″	2″	2 1/4″	10 5/8″	1 1/2″	3/8″	2 5/32″	1 5/32″	1 7/16″	2″
10″	3′-0″	150 lbs.	1 1/8″	1 3/4″	2 1/2″	12 13/16″	2 25/32″	17/32″	1 1/4″	4″	1 1/2″	2 1/8″	3/4″	2 1/2″	3″	12 13/16″	1 3/4″	1/2″	2 25/32″	1 1/4″	1 11/16″	21/64″
12″	3′-2″	190 lbs.	1 1/4″	2 1/4″	3″	15″	3 13/32″	1/2″	1 23/32″	4 11/16″	1 3/4″	2 5/8″	3/4″	3″		15″	2 1/4″	1/2″	3 13/32″	1/2″	1 3/4″	1/2″

*Hanging Stiles to be used for Double Acting Hinges.

DIMENSIONS OF EVER READY SPRING BUTT HINGES

Size of hinge, C	Width of door	Weight of door	Double Action A	B	D	F	G	H	I	K	L	M	S	T	Single Action A	B	D	F	G	H	K	S	T
3″	2′-2″	30 lbs.	3/4″	1″	4 3/8″	1 1/2″	9/32″	15/32″	2 7/32″	29/32″	9/32″	15/32″	7/8″	15/16″	3/4″	1″	4 3/8″	1 1/2″	9/32″	15/32″	29/32″	7/8″	11/64″
4″	2′-4″	42 lbs.	7/8″	1 1/4″	5 1/2″	1 11/16″	11/32″	5/8″	2 9/16″	15/16″	11/32″	5/8″	1 1/8″	1/4″	7/8″	1 1/4″	5 1/2″	1 11/16″	11/32″	5/8″	15/16″	1 1/8″	11/64″
5″	2′-6″	56 lbs.	1 1/8″	1 1/2″	6 11/16″	2 1/16″	5/16″	3/4″	2 7/8″	1 1/16″	5/16″	3/4″	1 3/8″	9/32″	1 1/8″	1 1/2″	6 11/16″	2 1/16″	5/16″	3/4″	1 1/16″	1 3/8″	3/16″
6″	2′-8″	72 lbs.	1 1/4″	1 3/4″	8″	2 1/4″	3/8″	13/16″	3 5/16″	1 3/16″	3/8″	13/16″	1 1/2″	5/16″	1 1/4″	1 3/4″	8″	2 1/4″	3/8″	13/16″	1 3/16″	1 1/2″	7/32″
7″	2′-9″	90 lbs.	1 3/8″	2″	9 15/16″	2 9/16″	7/16″	15/16″	3 11/16″	1 5/16″	7/16″	15/16″	1 3/4″	3/8″	1 3/8″	2″	9 15/16″	2 9/16″	7/16″	15/16″	1 5/16″	1 3/4″	15/64″
8″	2′-10″	110 lbs.	1 1/2″	2 1/4″	10 5/8″	2 3/4″	7/16″	1 3/32″	4 1/8″	1 7/16″	7/16″	1 3/32″	2″	1 3/32″	1 1/2″	2 1/4″	10 5/8″	2 3/4″	7/16″	1 3/32″	1 7/16″	2″	17/64″

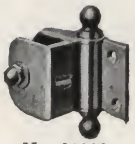
BOMMER CLAMP FLANGE SPRING HINGES

For Lavatory Doors on Marble, Glass, or Slate Partitions Having Hanging Stiles

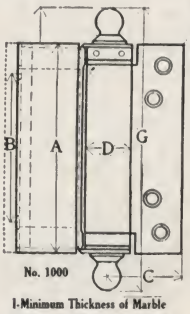
All Lavatory Hardware is made in Brass, Bronze and White Bronze and in all finishes. Specify finish wanted

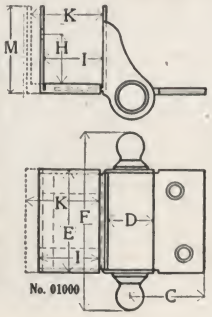


No. 1000



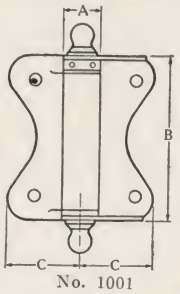
No. 01000

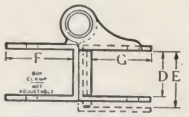


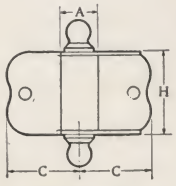


Details Single Action Spring Hinge No. 1000 and Blank No. 01000

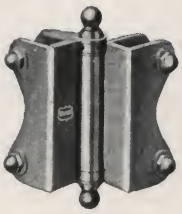
These hinges illustrated have clamp flanges adjustable ⅛ in. under and over following partition thicknesses, 1, 1¼, 1½, 1¾ and 2 in.



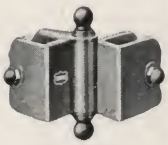




Details Double Clamp Hinge No. 1001 and Blank No. 01001



No. 1001



No. 01001

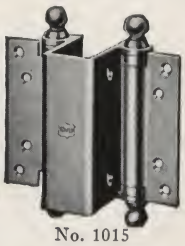
A	B	C	D	E	F	G	H	I	K	M
4	2⅞	1½	⅞	2	3½	5½	1	1⅛	1⅜	1¾

A	B	C	D	E	F	G	H
⅞	4	1⅞	1⅛	1⅜	1⅝	1½	2

For Lavatory Doors on Marble or Slate Partitions Without Hanging Stiles



No. X1002



No. 1015



No. 1002



No. OX1002



No. 01015



No. O1002

1015 and 1016 are for hanging two single-acting doors right and left to the same partition on one-clamp flange.

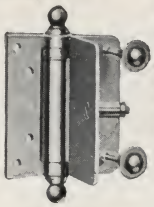
1002 and 1015 are for doors opening in and can be made to hold the doors open or closed as may be specified.

1016 and 1003 are for doors opening out; made only to hold the doors closed.

Flanges of the spring hinges are 4 in. in length; of the blank hinges without springs are 2 in. in length.

The clamp-flange of these hinges is not adjustable; the exact thickness of marble and door must be specified.

For very light or narrow single action doors, a spring hinge at the top and springless hinge at the bottom may be used.



No. 1012



No. 1016



No. 1003



No. 01012

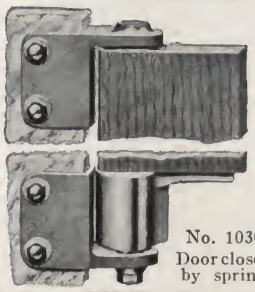


No. 01016



No. 01003

Bommer Lavatory Door Pivot-Hinges

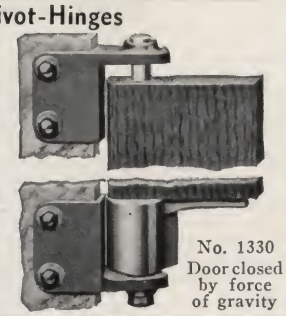


No. 1030
Door closed by spring

Can be used either single or double action, right or left hand.

Clamps are adjustable for variation in thickness of partition.

Adjustable alignment to hold door open at any point desired.



No. 1330
Door closed by force of gravity

Bommer Surface Spring Hinges

1011 as regularly made close the door, but if specifically so specified, they can be made with reverse springs to hold it open without extra charge.

For very light and narrow lavatory doors only, a hinge 1011 at the top of the door, 01011 at the bottom, may be used.

These hinges are regularly furnished with bolts for one leaf and wood screws for the other unless otherwise specified.



No. 01011



No. 1011

BOMMER STRIKES AND KEEPERS FOR LAVATORY DOORS

Adjustable for Marble, Glass or Slate Partitions, 1, 1¼, 1½, 1¾ and 2 Inches Thick



1051 For mortise bolt



1052 For throw latch



1055 For rim bolt

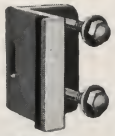
1056 For throw latch



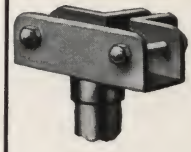
1057 For rim bolt



1062 For Rim bolt



Bommer Lavatory Stall Standards and Fittings for Marble, Glass or Slate Partitions





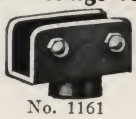
No. 1152



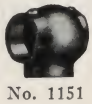
No. 1160



No. 1150



No. 1161



No. 1151



No. 1155



No. 1137
1¾x1¾x1¼





No. 1112



No. 1130
Left hand top
Right hand bottom

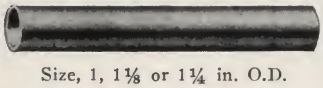


No. 1131
Partition supports center



No. 1132
Left hand top
Right hand bottom

Tubing for Top Rail



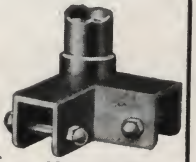
Size, 1, 1⅛ or 1¼ in. O.D.
Tubing for Stall Standards cut to length threaded both ends



No. 1143
Extra heavy Floor flange



No. 1142
Wall flange



No. 1103B

BOMMER SINGLE ACTION AND DOUBLE ACTION CHECKING FLOOR HINGES

Patented

Description

The Bommer Checking Floor Hinges embody the latest developments in construction as finally adopted by us after years of practical experience, comparison and study.

The spring is of the compression type and is adjustable in order to control varying conditions of exposure to wind currents or drafts.

The checking mechanism is of the valve and piston type and holds the door under control, operates smoothly and closes the door without noise. The closing speed of the door is regulated by a needle-valve, accessible through the floor-plate.

An automatic relief valve is provided to insure easy operation and to prevent damage to door or checking mechanism when the door is forced open in opposite direction before having time to close under the retarding-action of the check.

The opening resistance of the door is made as low as possible consistent with the closing force required.

The mechanism is immersed in and operates in a non-freezing, lubricating and checking liquid.

The hinge case is constructed of impermeable iron, preventing seepage of checking liquid.

The weight of the door is carried on hardened steel ball bearings.

The best materials obtainable are used. Parts subject to wear are made of drop-forged or stamped steel case-hardened. The spring is made of oil-tempered steel.

Our Guarantee

If the proper size hinges are installed according to our instructions and schedule of sizes required, we guarantee the Bommer Checking Floor Hinge to operate the door efficiently for 2 years.

FOR SINGLE ACTION DOORS

Offset Type, for Normal Size Interior or Exterior Doors

For Right or Left Hand Door

The No. 73 single action floor hinge is for inside doors, where the larger Bommer Floor Hinges cannot be used. The No. 73 and 74 are for vestibule and entrance doors respectively in theatres, office buildings, department stores, hospitals, churches, schools, apartments, etc.

No. 73 light interior doors, 3 ft. 0 in. x 7 ft. 6 in.
No. 73½ vestibule doors, 2 ft. 8 in. x 7 ft. 6 in.
No. 74 entrance doors (light), 3 ft. 6 in. x 7 ft. 6 in.

These checking floor hinges are self-closing from 120°, but the door can be opened to 180° (trim permitting). Can be furnished to hold open at any degree between 90 and 120, as may be specified.

The top pivot is cast bronze with a hardened steel pin which operates in a special composition bearing. This prevents wear and holds the door in position.

An iron outer case furnished with these floor hinges to set in cement, tile or stone floors.

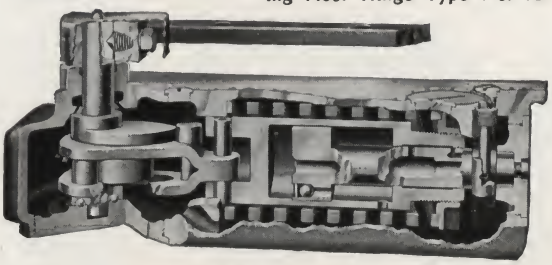
For segment top doors No. P3 Side Pivot is furnished in place of bronze top pivot, No. P2 Pivot.

Blue print template furnished on request.



At Left:
Offset Pivot No. P2

Below:
Sectional View of Bommer Checking Floor Hinge Type No. 73



HINGE DIMENSIONS

Hinge No.	Part	Length, in.	Width, in.	Depth, in.
73	Floor plate	11 3/8	5 3/8	.....
73½	.....	.....	.....	.....
74	Iron outer case	12 5/8	5 3/8	3 3/8

Offset Type, for Vestibule and Entrance Doors

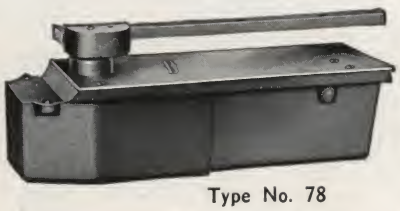
When Ordering, Always Specify the Hand of Door



Regular Offset Pivot No. P2



Side Pivot No. P3



Type No. 78

HINGE DIMENSIONS

Hinge No.	Part	Length, in.	Width, in.	Depth, in.
78	Floor plate	11 3/8	5 3/8	.....
78½	.....	.....	.....	.....
79	Iron outer case	12 5/8	5 3/8	3 3/8

Prefixed letters indicate: R, right hand; L, left hand; T, tapered spindle.

Nos. 78 and 79 are for vestibule and entrance doors respectively in theatres, office buildings, department stores, hospitals, churches, schools, apartments, etc.

No. R78 or L78 for light interior doors, 3 ft. 0 in. x 7 ft. 6 in.

No. R78½ or L78½ for medium entrance or heavy interior doors, 2 ft. 8 in. x 7 ft. 0 in.

No. R79 or L79 for heavy entrance doors, 3 ft. 6 in. x 7 ft. 0 in.

The over-all dimensions are the same as No. 73.

These floor hinges will permit the doors to be opened to 180°, close and check from that point.

The top pivot is cast bronze with hardened steel pin which operates in a special composition bearing. This prevents wear and holds the door always in position.

No. RT78½ and No. LT78½.

No. RT79 and LT79, for metal doors, hinges same as No. 78½ and No. 79, except tapered spindle and offset arm with rectangular hole.

For segment head doors No. P3 Side Pivot is furnished instead of the regular top pivot when so specified.

An iron outer case is furnished with these hinges to set in cement, tile or stone floors.

Blue print template furnished on request.

FOR DOUBLE ACTION DOORS

For Exterior and Heavy or Wide Interior Doors



Type No. 76

For entrance and vestibule doors of theatres, office buildings, department stores, hospitals, churches, schools, apartment houses, etc., where double action controlled doors are required. Non-holdopen.

No. 76 for outside door 2 ft. 10 in. x 7 ft. 6 in. x 2 in. thick.

No. 77 for outside door 3 ft. 6 in. x 7 ft. 6 in. x 2 in. thick.

Perfect alignment secured by means of adjusting screws on either side of door. Hinge, door arm and pivot entirely concealed. Floor plate and aligning screws only are visible.

An iron outer case is furnished to set in cement, tile or stone floors. Blue print template furnished on request.

HINGE DIMENSIONS

Hinge No.	Part	Length, in.	Width, in.	Depth, in.
76	Floor plate	12 7/16	5 5/16	.....
77	Iron outer case	12 7/16	5 5/16	3 5/8

For Interior Doors Only

No. 71 non-holdopen doors, 2 ft. 10 in. x 7 ft. 0 in.
No. H71 with holdopen at 90°.
No. 72 non-holdopen doors, 3 ft. 0 in. x 7 ft. 6 in.
No. H72 with holdopen at 90°.

Permits the door to swing in both directions, closes the door quietly and brings it to rest at center.

Note: Hinges that hold open on one side only, furnished when specially ordered.

No. H71 and H72 will hold door open automatically when opened 90°, until released by slight push, therefore does not require a separate door holder.

No. 71 and 72, same as No. H71 and H72 in all respects, but does not have holdopen feature.

No. H71 and H72 "holdopen" type in dull brass finish will be furnished, unless otherwise specified.

An iron outer case No. 71-24 or 72-24, priced separately, must be used when hinge is set in cement, tile or stone floor.

Blue print template furnished on request.

HINGE DIMENSIONS

Hinge No.	Part	Length, in.	Width, in.	Depth, in.
71	Floor plate	9 5/8	4 9/16	.....
72	Iron outer case	9 5/8	4 9/16	2 7/8



Type No. 71

For Light Interior Doors Only 2 Ft. 8 In. Wide



Type No. 70

No. 70 non-holdopen; No. H70 with holdopen.

For pantry or dining room doors in residence and apartment houses. Permits door to swing in both directions, closes door quietly and brings it to rest at center.

No. H70 will hold door open automatically when opened 90°, until released by a slight push, therefore does not require a separate door holder.

No. 70 is used when doors are not required to be held open.

No. H70 "holdopen" type in dull brass finish will be furnished, unless otherwise specified.

An iron outer case No. 70-33 priced separately, must be used when this floor check is set in cement, tile or stone floors.

Blue print template furnished on request.

HINGE DIMENSIONS

Hinge No.	Part	Length, in.	Width, in.	Depth, in.
70	Floor plate	8 5/8	4 9/16	.....
.....	Iron outer case	8 13/16	4 9/16	2 13/16

For Office Gates

For Narrow, Light Wood Gates: No. G70 non-holdopen; No. GH70 with holdopen.
For Wood Gates: No. G71 non-holdopen; No. GH71 with holdopen.
For Metal Gates: No. G72 non-holdopen; No. GH72 with holdopen.

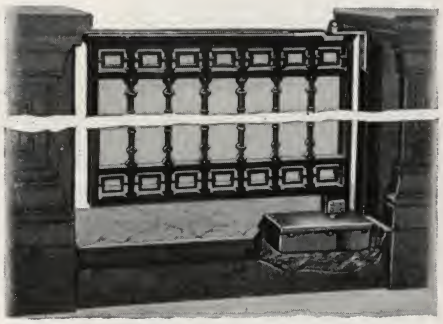
The construction of the mechanism of No. G70 is the same as No. 70, and No. G71 and G72 are the same as No. 71 and 72, respectively. The special top pivot has a stop to prevent opening beyond 120°. The shoe permits alignment and is adjustable to varying thickness of the gate.

An iron outer case No. G70-33, G71-24 or G72-24, priced separately, must be used when floor check is set in cement, tile or stone floors.

Blue print template furnished on request.

HINGE DIMENSIONS

Hinge No.	Part	Length, in.	Width, in.	Depth, in.
G70	Floor plate	8 5/8	4 9/16	.....
.....	Iron outer case	8 13/16	4 9/16	2 13/16
G71	Floor plate	9 5/8	4 9/16	.....
G72	Iron outer case	9 5/8	4 9/16	2 7/8



Type No. 71 Applied to Gate

LAWSON-MILWAUKEE HINGES

MANUFACTURED BY

MILWAUKEE STAMPING COMPANY

MILWAUKEE, WIS.

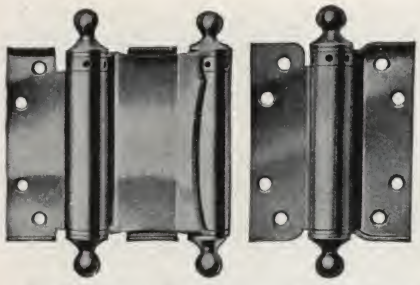
TELEPHONE
Greenfield 2400

CHICAGO OFFICE AND WAREHOUSE, 150 No. Wacker Drive
NEW YORK OFFICE AND WAREHOUSE, 416 Broadway
SEATTLE OFFICE AND WAREHOUSE, R. F. Bevers, 521 Thirtieth Avenue, So.
LOS ANGELES OFFICE AND WAREHOUSE, F. W. Jonas, 1625 Fletcher Avenue, South Pasadena, Calif.
BOSTON OFFICE AND WAREHOUSE, C. E. Harris Co., 161 Summer Street
ATLANTA OFFICE, Thomas G. Perry, 406 Southeastern Trust Co. Building
DALLAS OFFICE, John H. North, 1002 Woodlawn Avenue
NEW ORLEANS OFFICE, Fred J. Allen, 1009 Broadway
MONTREAL, QUE., C. J. Walker, Ltd., 507 Coristine Bldg.
TORONTO, ONT., T. Mortimer & Co., 64 Wellington Street, W.

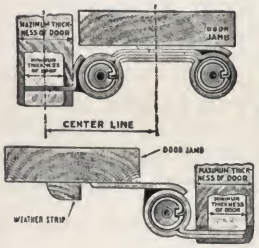
For Toilet Partitions, Showers and Doors, see Manufacturers' Index

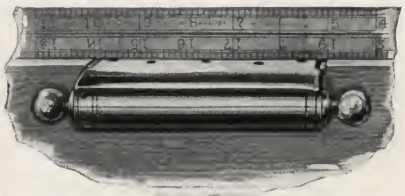
Lawson "Nu" Jamb Spring Hinge

The Lawson "Nu" Jamb spring hinge does not require the use of a hanging strip. It fastens directly to the jamb and thus gives a far more solid support for the door than if a hanging strip were used. Double acting and single acting hinges for use in connection with hanging strip are manufactured and can be furnished on request.



Double Acting Hinge Single Acting Hinge





The Only Mortise to Make to Attach "Nu" Jamb Spring Hinge

LAWSON "NU" JAMB SPRING HINGES

Size of hinge	For doors
3″	¾″ thick x 2′ 3″ wide or 1″ thick x 2′ 0″ wide
4″	1″ thick x 2′ 6″ wide or 1¼″ thick x 2′ 0″ wide
5″	1⅛″ thick x 2′ 6″ wide or 1½″ thick x 2′ 3″ wide
6″	1¼″ thick x 2′ 9″ wide or 1¾″ thick x 2′ 3″ wide
7″	1⅜″ thick x 2′ 9″ wide or 2″ thick x 2′ 6″ wide
8″	1½″ thick x 3′ 0″ wide or 2¼″ thick x 2′ 6″ wide
10″	1¾″ thick x 3′ 0″ wide or 2½″ thick x 2′ 9″ wide

For outside doors subject to draft, wide or heavy doors of hardwood, metal covered doors, or doors weighted with heavy plate glass or hardware, use the largest size hinge the thickness of the door will permit.
Wide doors require larger size hinges than narrow doors.



Gate Hinge

"Universal" Pivot Gate Hinges

Lawson "Universal" pivot gate hinge is sagless and requires no hanging strip.

It is the only gate hinge with a positive alignment feature.

Can be used on stiles 2 in. or over. Thickness of gate, 1 to 2 in. Diameter of cup, 2 in. Brackets, 2x1⅛ in. wide.

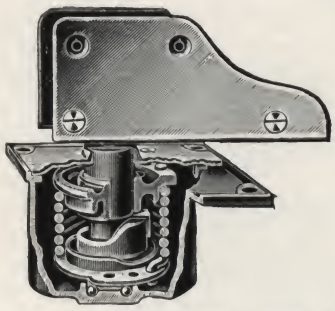
Surface Floor Hinges

Series No. 600—Heavy construction; working parts enclosed in grease chamber, keeping out dirt and preventing wear. For 1⅛ to 1¾-in. doors.



No. 600 Lawson Surface Floor Spring Hinge
Roller and Ball Bearing-Adjustable
Alignment and Spring Tension

Matchless Mortise Floor Hinge—The oldest and best type of double acting floor hinge. No hold back feature. Specially adapted for use on heavy doors.



Matchless Mortise Floor Hinge

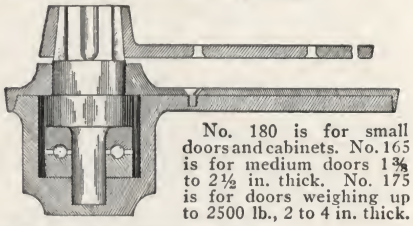
Do not use stronger than No. 1300 for residences. Width of door is the main point to consider

MATCHLESS MORTISE FLOOR HINGE

Series No.	1200	1300	1400	1500	1600
Thickness of doors	1⅛″ to 1½″	1½″ to 2″	2″ to 2½″	2½″ to 3¼″	3″ to 4″
Size of cover	4¼″x4¼″	4¾″x4¾″	5″x5″	5½″x5½″	6⅛″x6⅛″
Center of pintle to door casing	1⅞″	2⅛″	2⅜″	2½″	2⅛″
Depth of hinge	3⅛″	3¼″	3½″	4″	4″

Matchless Pivot Hinges Without Springs

The ball bearings distribute the weight and provide easy and noiseless action. For double and single acting doors.



No. 180 is for small doors and cabinets. No. 165 is for medium doors 1⅜ to 2½ in. thick. No. 175 is for doors weighing up to 2500 lb., 2 to 4 in. thick.

MATCHLESS PIVOT HINGE WITHOUT SPRING

Dimensions	No. 165	No. 175	No. 180
Top plate	2 1/16″ x 4½″	4¾″ x 5¼″	1″ x 4″
Depth of cup	1¾″	3⅛″	1⅛″
Center of pintle to jamb	1″	1⅞″	1 1/16″
Bottom socket to floor	⅜″	⅝″	⅜″
Top pivot face plate	1⅜″ x 5⅞″	2″ x 8″	1″ x 4¾″
Invisible socket	1 3/16″ x 7⅞″	2″ x 9¾″	⅝″ x 3¾″

Lavatory Hardware

Lawson "Universal" Pivot Spring Hinge—Can be set to hold door open at any position desired. Pivot bearings prevent sagging of door. The pintle is tapered at bottom and fits in tapered socket. When nut is tightened, pintle is drawn down into socket and taper fit holds pintle firmly in place. Double-acting but can be used single-acting by application of door stop or strike.

Lawson Gravity Pivot Hinge—Resembles Lawson "Universal" pivot spring hinge in size, shape, and attachments. For use on double acting doors, but can be used on single acting by the application of a door stop or strike.

This hinge has a ball bearing roller which guarantees smooth action. All working parts are completely inclosed in the hinge housing. Furnished with brackets for attaching to marble, slate, or metal partitions.

No. 1902 Single Acting Lavatory Hinge—With double box, one for marble and one for door. Used on government work.

No. 1900 Single Acting Lavatory Hinge—Same as above only one box for application to marble.

No. 1983 Hook and Bumper—Pressed brass coat and hat hook with bumper. Size 3⅝ in. by 3 in.

No. 1968—Door Pull—Standard form of door pull, one hole each end for wood or machine screws.

No. 1990 Rim Bolt—A typical mortise rim bolt, made of cast metal. Used with Strike No. 1848.

No. 1963 Throw Latch—A typical throw latch made of cast metal; with rubber bumper on knob bar, makes complete circle. Used with Strike No. 1844.

No. 1965 Heavy Slide Bolt—An unusually heavy type of slide bolt.

No. 1988 Mortise Bolt—A typical mortise bolt; for use with Strike.

Nos. 1842, 1844, and 1848 Door Strikes and Keepers—For application to marble stile to receive mortise bolt throw latch and rim bolt.

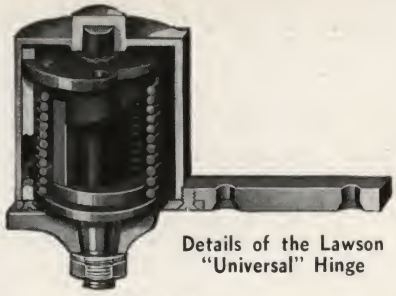
Finish—All lavatory hardware furnished in nickel plated brass, white metal, or chromium plated brass.

Hardware Specifications for Toilet Stalls

Marble, Slate, or Glass—All hinges for toilet stall doors shall be of the pivot type, similar to Lawson's No. 2234 or 2834, made by MILWAUKEE STAMPING COMPANY, and so arranged that they may be set to hold the door open at any desired position, either in or out, as the owner may elect, after the hinges are applied. They shall be of solid brass, nickel plated.

Metal Partitions—All doors shall be equipped with pivot hinges similar to Lawson's "Universal" hinge or Lawson's Gravity hinge for metal doors, made by MILWAUKEE STAMPING COMPANY, and so arranged that they may be set to hold the door open in or out at any desired position, as the owner may elect, after the hinges are applied.

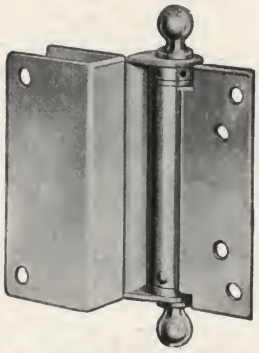
Where Coin Locks Are to Be Used—(Add the following to above specifications.) All doors shall be set, before the strike is attached, to hold the door open at any desired position. Open door out and attach strike, thus giving the spring additional power necessary to insure locking of the door, no matter how gently the door is closed.



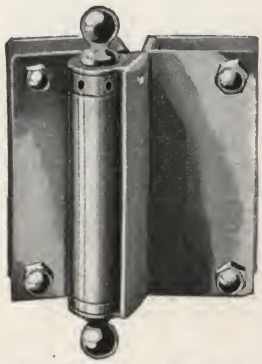
Details of the Lawson "Universal" Hinge



No. 2834 Spring Hinge



No. 1900 Lavatory Hinge



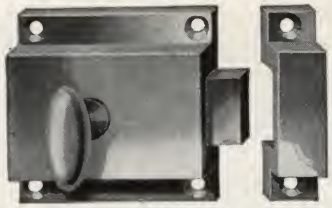
No. 1902 Lavatory Hinge



No. 1983 Hook and Bumper



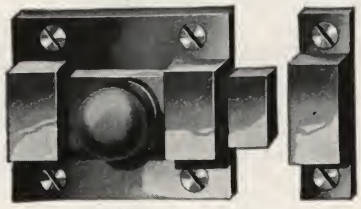
No. 1968 Door Pull—$0.70
Cast Brass
Size. 5"x1"
Standard one hole each end for wood or machine screws



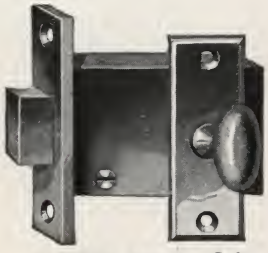
No. 1990 Rim Bolt
Cast Metal
Size of case, 2½"x2½" to center of handle, 1½"
Bolt ¼"x⅞"



No. 1963 Throw Latch
Cast Metal
With rubber bumper on knob bar makes complete circle
Bases, 2"x1⅝"
Bar, 1/16"x⅞"x3"



No. 1965 Heavy Slide Bolt
Cast Metal
Size of case, 2½"x3"
Size of bar, 1/16"x3½"



No. 1988 Mortise Bolt
Cast Metal
Size of case, 1⅝"x2¾"
To center of handle, 1¾"
Bolt, 7/32"x1/16"



No. 1842
For Mortise Bolt for Doors Opening In or Out



No. 1844
For Throw Latch for Doors Opening In



No. 1848
For Rim Bolt for Doors Opening In

Lavatory Door Strikes and Keepers

THE SHELBY SPRING HINGE COMPANY

SHELBY, OHIO

NEW YORK REPRESENTATIVE—Harvey Bronner, 90 West Broadway, Room 51

PACIFIC COAST REPRESENTATIVE—Pond Specialty Hardware Co., 2115 Arapahoe Street, LOS ANGELES, CAL.

SHELBY CHECKING FLOOR HINGES

Construction

The working parts of all Shelby Hinges are built of substantially proportioned parts of wrought iron or steel, accurately machined.

The spindles of all, except the smallest hinges, are mounted in ball bearings of suitable size.

Springs are manufactured from the most suitable steel obtainable and are carefully heat treated and tempered.

Checking liquid is non-freezing and meets the requirements of the U. S. Government specification.

Finish

Floor plates, pivots, and the other exposed parts can be furnished in wrought and cast brass finished in any of the standard hardware finishes.

Templates

Blue print templates of any of our hinges will be furnished on request.

Catalogue

A complete fifty-page catalogue will be mailed on request.

Hand of Doors

To determine the hand of single acting checking hinges: stand on the outside of entrance doors, on the corridor side of room doors, on the room side of closet doors.

A door hinged on the right-hand side and opening from you as you enter requires a *right-hand hinge.*

A door hinged on the left-hand side and opening toward you as you enter requires a *right-hand hinge* but a left-hand reverse bevel lock.

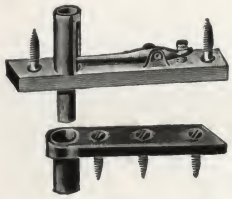
SHELBY DOUBLE ACTING CHECKING FLOOR HINGES NOS. 10, 11 AND 66

For Interior Doors

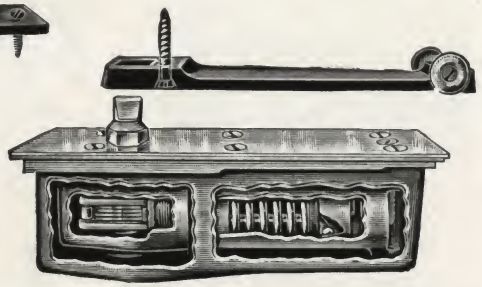
Federal Specification: Type No. 2350: Sizes II, No. 10 and Size III, No. 11

These hinges have cam action with cam of laminated and hardened steel. Compression spring, liquid checking, needle valve speed control, adjustable alignment.

Nos. 10 and 11 Cement Cases are provided with cork gasket to prevent scrub water getting into the case. Holdopen unless non-holdopen is specified. Prices do not include cement case, which can be furnished at additional cost.



No. 1 Pivot



Also made for office and partition gates. Nos. G10 and G11

No. 66 controls double acting doors between those sizes specified for our No. 11 and our No. 22. The top of the spindle is supported by a special anti-friction bronze bearing with graphite treated packing washer. A special valve in the piston acts as relief when the manual force pushing the door is greater than the power of the spring. Uses No. 2 pivot and is furnished non-holdopen unless holdopen is specified and priced with Cement Case.

MAXIMUM DOOR SIZES, WOOD AND KALAMEIN DOORS

Hinge No.	Width	Height	Thickness
10	2 ft. 8 in.	7 ft. 0 in.	1¾ in.
11	3 ft. 0 in.	7 ft. 6 in.	1¾ in.
66	3 to 4 ft.	7 ft. 6 in.	1¾ in.

HINGE DIMENSIONS

	Part	Length	Width	Depth
No. 10 and No. 11	Floor Plate	9⅜ in.	5 in.	.....
	Iron Hinge Case	8 5/8 in.	4 5/16 in.	2 1/16 in.
	Cast Iron Cement Case	9 5/16 in.	4 5/8 in.	3 in.
No. 66	Floor Plate	11 1/16 in.	5 in.	.....
	Iron Hinge Case	10 3/16 in.	4½ in.	3 1/16 in.
	Cast Iron Cement Case.	11¼ in.	5 in.	3¼ in.

SHELBY DOUBLE ACTING CHECKING FLOOR HINGES NOS. 22 AND 23

For Exterior and Heavy or Wide Interior Doors

Federal Specification: Type 2350A: Sizes I and II

These hinges have two torsion springs and two checking chambers. Each side of the hinge operates independently from the same spindle or post.

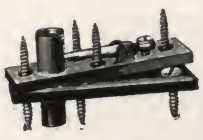
The weight of the door is supported on a forged steel spindle which is seated on ball bearings with special hardened steel ball race.

A new ball bearing device with hardened steel ball race at the top of the spindle takes care of the thrust of the springs. Special bronze bushing and packing about the spindle insures long service and freedom from leakage.

Adjustable spring tension. Closing speed controlled by two needle valves. Top pivot and hinge arm concealed in the edge of the door.

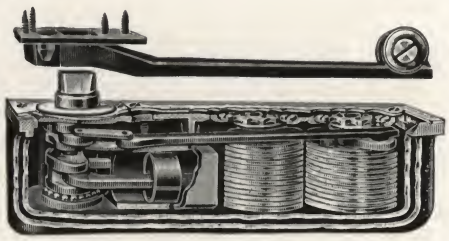
HINGE DIMENSIONS

Hinge No.	Part	Length in.	Width in.	Depth in.
22	Floor plate	14 3/4	5½	3¾
	Cast iron cement case	14 1/16	5 3/8	
23	Floor plate	17⅛	6⅛	4⅛
	Cast iron cement case	17	6 1/16	



No. 2 Pivot

With special self-lubricating bronze bearing



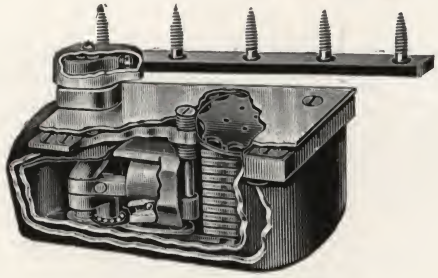
MAXIMUM DOOR SIZES

Hinge No.	Width	Height	Thickness
Interior Doors			
22	For Heavy or Wide Doors		
Exterior and Vestibule Wood and Metal Covered Doors			
22	2 ft. 10 in.	7 ft. 6 in.	2 in.
23	3 ft. 6 in.	7 ft. 6 in.	2½ in.

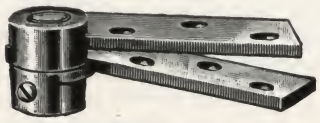
SHELBY SINGLE ACTING CHECKING FLOOR HINGES NOS. 8, 18 AND 19

Offset Arm—Torsion Spring Type—For Interior, Entrance and Vestibule Doors

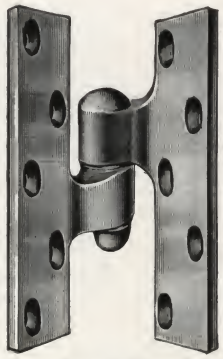
Federal Specification: Type No. 2352: Sizes, I, II and III



Specify Hand of Door



No. 6 Pivot
For Segment Head Doors
Use No. 7



No. 7 Pivot
For segment head doors; or used as an intermediate pivot. Federal specification Type No. 2353

These hinges have crank action. Spindle and hinge arm are steel forgings. The weight of the door is carried on a ball bearing with hardened steel balls and raceways.

Will allow door to open to 180° and is self-closing. Holdopen or non-holdopen can be furnished if specified.

Spring tension and speed of closing is adjustable.

Top pivot is a bronze casting with hardened steel pin and has a special bronze self-lubricating bushing.

MAXIMUM DOOR SIZES

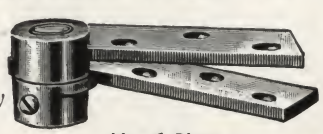
Hinge No.	Width
Interior Doors	
8	3 ft.
18	3 ft. 6 in.
Exterior and Vestibule Doors	
18	2 ft. 10 in.
19	over 2 ft. 10 in.

HINGE DIMENSIONS, HINGES NOS. 8, 18, 19, 118 AND 119

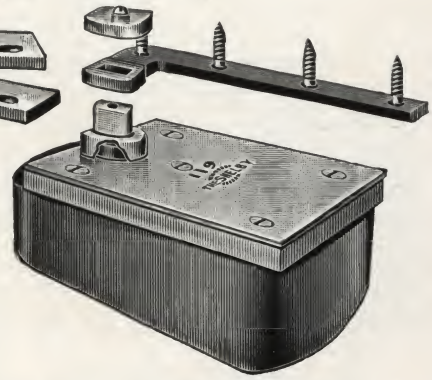
Hinge No.	Part	Length	Width	Depth
8	Floor Plate	7¾ in.	4⅝ in.	.....
	Hinge Case	8¼ in.	4 3/16 in.	3 1/32 in.
	Cast Iron Cement Case	8⅝ in.	4⅜ in.	3 3/16 in.
18 and 118	Floor Plate	8⅛ in.	5 1/16 in.	.....
	Cast Iron Cement Case	10 1/16 in.	5 in.	3⅝ in.
19 and 119	Floor Plate	9⅞ in.	6⅛ in.	.....
	Cast Iron Cement Case	11⅛ in.	5⅞ in.	4 1/16 in.

SHELBY SINGLE ACTING CHECKING FLOOR HINGES NOS. 118 AND 119

With Offset Arm and Tapered Spindle for Heavy Doors Where Vertical Adjustment Provided on Nos. 18 and 19 Is Unsatisfactory



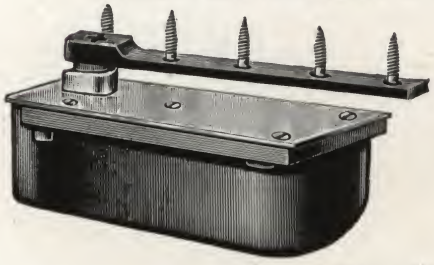
No. 6 Pivot

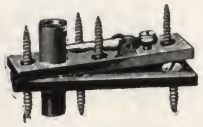


The spindle is squared and tapered and the hinge arm has a rectangular hole which fits snugly over the spindle and prevents any possibility of the door slipping down on the spindle and dragging on the threshold.

For dimensions see table under Nos. 18 and 19.

SHELBY CENTER HUNG SINGLE ACTING CHECKING FLOOR HINGES NOS. C8, C18 AND C19





No. 1 Pivot (C8)
No. 2 Pivot
(C18 and C19)

Torsion Spring Type for Interior, Entrance and Vestibule Doors Hung Without Mullions

Federal Specification: Type No. 2350B: Sizes I, II, and III

These hinges are non-holdopen or holdopen as specified. No hardware shows on the face of the door, and the floor plate centers under the door. Prices include cement cases. In ordering be sure to specify the hand of the door.

MAXIMUM DOOR SIZES

Hinge No.	Width
Interior Doors	
C8	3 ft.
C18	3 ft. 6 in.
Exterior and Vestibule Doors	
C18	2 ft. 10 in.
C19	over 2 ft. 10 in.

HINGE DIMENSIONS

Hinge No.	Part	Length	Width	Depth
C8	Floor Plate	8 3/32 in.	4⅝ in.	.....
	Hinge Case	8¼ in.	4 3/16 in.	3 1/32 in.
	Cast Iron Cement Case	8⅝ in.	4⅜ in.	3 3/16 in.
C18	Floor Plate	10¼ in.	5 1/16 in.	.....
	Cast Iron Cement Case	10 1/16 in.	5 in.	3⅝ in.
C19	Floor Plate	11¼ in.	6⅛ in.	.....
	Cast Iron Cement Case	11⅛ in.	5⅞ in.	4 1/16 in.

SOSS MANUFACTURING COMPANY, INC

Manufacturers of Invisible Hinges

ROSELLE, N. J.

DETROIT OFFICE, 1051 Book Building, Washington Boulevard

REPRESENTATIVES

BOSTON, MASS., C. E. Harris Co., 161 Summer St.
CHICAGO, ILL., John C. Bold & Co. 228 No. LaSalle St.
CLEVELAND, OHIO, The Gesing Bros. Co., 1037 Terminal Tower
LOS ANGELES. CAL., W. H. Steele, 302 E. 4th St.
MINNEAPOLIS, MINN., Adam N. Stark, 207 3rd St., South
ST. LOUIS, MO., W. E. Way, 825 Chemical Bldg.
NEW ORLEANS, LA., Henri J. Pitard, 1403 Canal Bank Bldg.
SAN FRANCISCO, CAL., D. A. Pancoast Co., 26 O'Farrell St.
JACKSONVILLE, FLA., Harry A. Hoffner, P. O. Box 4264

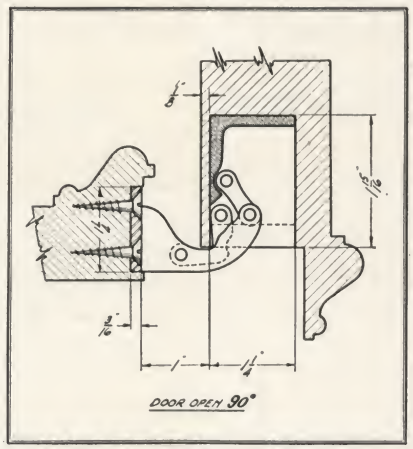
Soss Invisible Hinges

Soss invisible hinges are specially desirable for finer work, for secret panels, in fact, wherever the obtrusiveness of an ordinary visible butt is objectionable. They are mortised into the door and jamb and when the door is closed, are entirely invisible, giving *beauty without interruption.* With Soss invisible hinges, no metal projects at either side of the door, and there is no wide crack when the door is open, for these hinges fit into a mortise. Soss invisible hinges also offer a safety feature of unusual value—when the door is closed, there is no way of reaching the hinges. As an added advantage, Soss invisible hinges require no extra effort or labor to apply—they are mortised into the same part of the door and jamb as the ordinary butt.

To all these features of Soss invisible hinges is added extraordinary strength and carrying power, due to short leverage and sturdy construction.

SOSS

TRADE-MARK



No. 117 Soss Hinge Installed

Showing clearance when door is fully opened. Used on house doors and secret panels with projecting moulding

Years of use have proved that doors hung with Soss hinges will not sag, nor will hinges wear down under heavy loads.

A templet, the use of which insures an accurate mortise, is furnished with each pair of hinges.

Types—Soss Invisible Hinges are supplied in three types, irrespective of plating finish, as follows:

Rufkast: our standard hinge with smooth surfaces, but not ground or polished.

Blunt: on our blunt hinges, the hinge plates are ground and polished.

Polished: on the polished type, not only plates but links or connecting members of hinge are ground and highly polished, producing a product of superior finish.

Standard finish for all of the above types of hinges is dull brass, but we can supply them in any special finish desired at an additional charge. Prices for special finishes on application.

Specified Everywhere in the Best Work

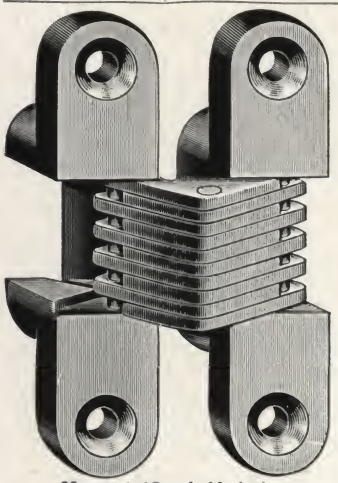
Soss invisible hinges are extensively used in the finest residences, office and public buildings, hotels, store fixtures, cabinet work and furniture. They have been adopted by many of the foremost architects and furniture manufacturers in the country.

Catalogue

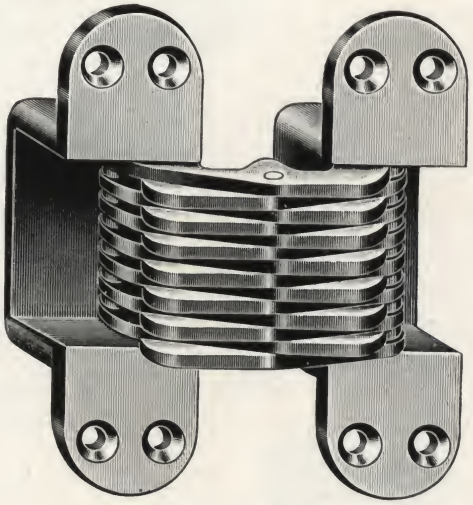
Latest illustrated catalogue will be sent on request.

SOSS INVISIBLE HINGES FOR FURNITURE AND LIGHT CABINET WORK

Hinge No.	Thickness of wood, minimum, in.
99	9/16
100	9/16
101	9/16
102	9/16
103	11/16
110	5/8
115	11/16
300	9/16
302	11/16
302-A	11/16
303	11/16
306	9/16



No. 116 (One-half size)
For Standard House Doors
Normal clearance; roller bearings



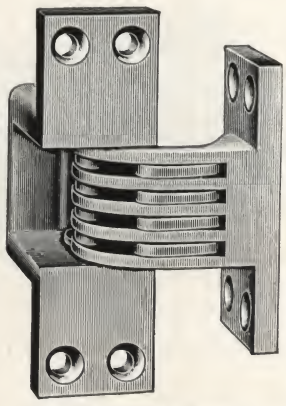
No. 120-R (One-half size)
For Heavy Wood Doors
Wide clearance for projecting trim

SOSS INVISIBLE HINGES FOR LARGER DOORS

Hinge No.	Thickness of wood, in.		For doors	
	Minimum	Maximum	Ft. wide	Up to ft. high
104	11/16	7/8	2	5
108	7/8	1 1/8	2	5
112	1	1 1/4	2	6
115	1 5/16	1 5/8	2 1/2	6
121	1 1/8	...	2	6
117	1 1/2	...	2 1/2	6
118	1 1/2	1 5/8	2 1/2	6
118-A	1 1/2	1 5/8	2 1/2	6
120-R	1 3/4	2 1/2	3	7
120-J	1 1/2	Metal and fireproof doors		

SOSS INVISIBLE HINGES FOR METAL CABINETS AND MEDICINE CLOSETS

Hinge No.	Thickness of metal, in.
105	1/16
114	1/16
314	1/16



No. 117 (One-half size)
For House Doors and Secret Panels with Projecting Mouldings

GLYNN-JOHNSON CORPORATION

LAPORTE, INDIANA

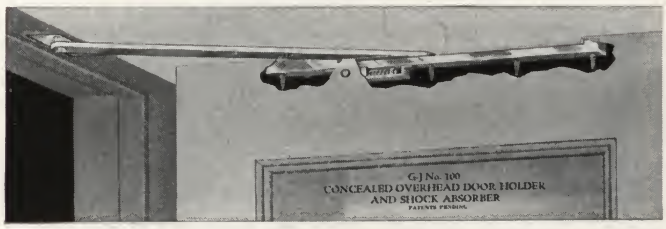
G-J DOOR HOLDING DEVICES

Concealed Overhead Door Holder and Shock Absorber for Single and Double Acting Doors

This type of Holder has accomplished what has long been desired in that the Door Holder is not visible when the door is closed, only the operating arm appears in the open position, thereby retaining the trim appearance of entrance and vestibule doors. A mechanical hold-open feature has a smooth, non-racking action. Engages and holds door at 90°. A safety release is provided together with an encased shock absorber. Not effected by sagging doors.

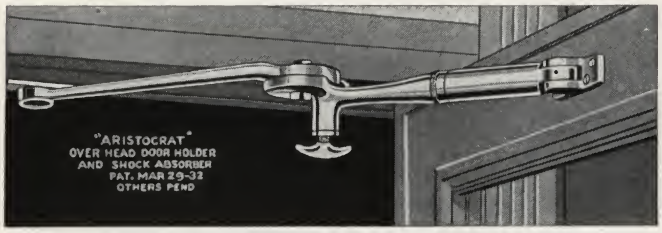
Manufactured of bronze for all size doors.

Advise type of door and dimensions, also hinge mounting. Write for full details.

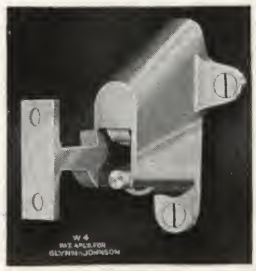


"Aristocrat" Overhead Door Holder and Shock Absorber

An attractive, neat and unobtrusive device specially designed for entrance vestibule and exit doors. Made in two types, positive and automatic release. Quarter turn of handle causes door to hold open at any angle up to 125°—also prevents door from swinging beyond a given point. Can be applied to all doors opening out. Shock absorber absorbs slam. Furnished without hold-open adjustment if desired. Cast bronze bearings and fittings with rustproof, triple-plated, malleable arms. Polished or brushed bronze, brass or cast phosphor bronze. Special finishes on request. For doors up to 36 in. wide.



Automatic Door Holders, Bumpers and Strike Plate Hooks



No. W4

No. W4

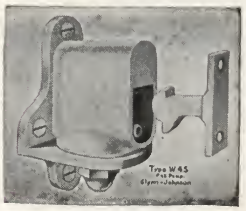
For wall installation where doors open 90 to 180° parallel with wall. A door holder, stop and shock absorber housed in a single tapered unit that engages and releases door automatically. Cast bronze or brass base, 2⅞x4 in. Projection, 3 in.

No. F4BP

Floor type Automatic Door Holder and Bumper. Engages and releases door automatically. All working parts enclosed. An unusually strong and permanent anchorage is assured by first mounting the anchor plate to the concrete with ½-in. bolt and expansion shield and then applying the Holder to the anchor plate with machine screws.



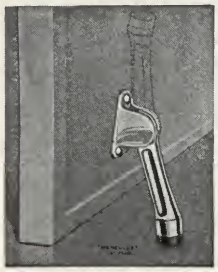
No. F4-BP



No. W4-S

No. W4-S

Swivel wall type automatic door holder and bumper. Mounted on countersunk swivel base so holder can be set at any angle within 180°. For all doors that swing to wall at various angles. Cast bronze or brass. 2¼x3¾ in. Projection, 3 in.



Hercules

Hercules

Self-adjusting, troubleproof. Operated by raising or lowering tip of holder with foot. Threaded-in rubber tip acts as non-skid shoe which grips firmly and will not mar floor. Tips easily replaced. Cast bronze or brass, polished or satin finish.

No. F9

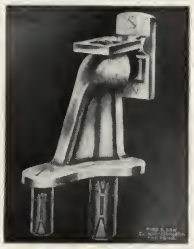
Semi-automatic door holder and bumper of sturdy bronze construction. Encased brass plunger absorbs shock of slamming door. Extension on bottom of hook acts as strike plate. Will not twist or turn out of alignment.

Types W20 and F20

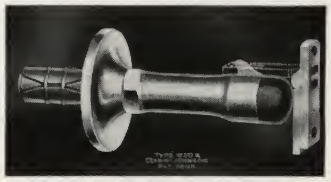
Door holders and bumpers with strike plate hooks. Hook plate does not protrude and when not engaged acts as strike plate protecting door. Shock is quietly absorbed by resilient rubber tip. For wall or floor mounting. Cast bronze or brass, polished or satin finish.



No. F9



Floor Type F20 and F20-X



Wall Type W-20 and W20-X

G-J Door Silencers

For Wood and Metal Frames



G-J No. 66 for Wood



G-J No. 67 for Metal

Combines action of rubber, air and spring tension to cushion closing door. When door is closed smaller bumper recedes into a beveled, flanged housing, leaving rubber protruding 1/16 in. preventing contact between door and frame but permitting standard clearance. Spring pressure supplies constant tension against door eliminating latch rattle. Furnished in 2, 3, 4 and 5-lb. pressure. Average wood door requires 3-lb. pressure; average metal door, 4 lb.

G-J Invisible Latch

For all types of secret door and panels. Holds firmly without showing any hardware to mar appearance. Operates in any position, left or righthand, top or bottom. May be set in flush or on top of stop or bottom of shelf. To operate, simply a light push locks it—a slightly harder push releases the latch.

Unaffected by shrinking or swelling of door or panels so long as they can be opened and shut. Made of cast brass.



For Information on Complete Line of Door Holding Devices—Write Factory

THE OSCAR C. RIXSON COMPANY

Manufacturers of Rixson Floor Checks, Hinges and Casement Hardware

CHICAGO, ILL.

REPRESENTATIVES

ATLANTA, GA., Luke Seawell, 419 Red Rock Building
NEW ORLEANS, LA., Fred J. Allen, 1009 Broadway
NEW YORK, N. Y., George Pariot, Inc., 2034 Webster Avenue
PHILADELPHIA, PA., John H. Jarvis, 608 Otis Building
PACIFIC COAST, Geo. E. Tupper, 557 Market Street, San Francisco, Calif.
CANADA, The Richards-Wilcox Canadian Co., Ltd., London, Ont.

The Company and Its Reputation

For more than 30 years THE OSCAR C. RIXSON COMPANY has been engaged in the manufacture of improved mechanisms in builders' hardware, including floor checks, door checks, casement hardware, hinges, etc. These products have been specified and used on thousands of jobs, ranging from the moderate cost residence to the largest and most expensive types of apartment, hospital, hotel, office and monumental buildings.

Rixson Hardware Represents Quality and Practicability

The best obtainable materials are used in the manufacture of Rixson Hardware Specialties, many of which are protected by patents. Their quality and the ease with which they are installed at the job, make them welcome to both the architect and the contractor. Rixson records of long lived service assure you of that dependability which other users know so well.

Rixson Service to Architects

Representatives of THE OSCAR C. RIXSON COMPANY are fully qualified and willing to furnish every possible assistance and co-operation to architects, builders, etc. You are invited to make use of this co-operation.

Our Engineering, Designing and Service Departments at the home office are also at your disposal and will gladly assist in the solution of special problems.

We will also be pleased to send a copy of our General Catalogue with complete data upon request.

Rixson Single and Double Acting Floor Checks

For nearly a quarter of a century this Company has been successful manufacturers of floor checks and consequently, Rixson Floor Checks have become a byword wherever a closing device is considered for the better class of entrance, vestibule and interior doors. To substantiate the above it is only necessary to consider the thousands of office buildings, monumental structures, stores of all kinds, from the most pretentious to the ordinary, as well as the countless thousands of residences where Rixson Floor Checks are on duty at all times closing doors innumerable times daily without the slightest attention.

This bears witness to the "In-built Quality" of Rixson Products.

As types of buildings change and new conditions present themselves this company is always found studying these changed conditions trying to meet them with "Rixson Quality" Products. This company will never present an article not measuring up to "Rixson Standard," and even though a device becomes obsolete, we will always endeavor to maintain a service on it. This should be considered when specifying as it assures *permanent satisfaction.*

A SUGGESTED SPECIFICATION FOR FLOOR CHECKS

Note: Architects are urged to specify by name and number, assuring Genuine Rixson Products.

(1) All exterior and vestibule double acting doors shall be provided with Rixson Double Acting Floor Check—

No. 30 for doors not over 2 ft. 10 in. wide.
No. 40 for doors not over 3 ft. 6 in. wide.

(2) Interior double acting doors unless otherwise mentioned shall be provided with Rixson Double Acting Floor Check—

No. 10 for doors not over 2 ft. 8 in. wide.
No. 15 for doors not over 3 ft. wide.
(Where hold-open feature is wanted.)
No. 12 for doors not over 2 ft. 8 in. wide.
No. 16 for doors not over 3 ft. wide.
(Where doors are not wanted with hold-open feature.)

(2A) Interior double acting doors, as called for on plans and in details shall be provided with Rixson Double Acting Floor Check No. 30.

(This specification for interior doors subject to severe use or of such size that Nos. 10-12, 15-16 would not be suitable.)

(3) All exterior and vestibule single acting doors shall be provided with Rixson Single Acting Floor Check—

No. 20, 120 or 21 as called for in details for doors not over 2 ft. 8 in. wide.

No. 25, 125 or 26 as called for in details for doors not over 3 ft. 6 in. wide.

(4) All exterior and vestibule doors shall be provided with Rixson Door Stay and Holder No. 38 in bronze metal of correct size.

(5) All interior single acting self-closing doors shall be provided with Rixson Single Acting Floor Check—

No. 18 or 18½ (as required by detail) for ordinary doors not over 3 ft. wide.

(6) Interior single acting self-closing doors, as called for on plans and in details shall be provided with Rixson Single Acting Floor Check—

No. 20 or 21.

(This specification for doors over 3 ft. wide or subject to severe use where No. 18 or 18½ would not be suitable.)

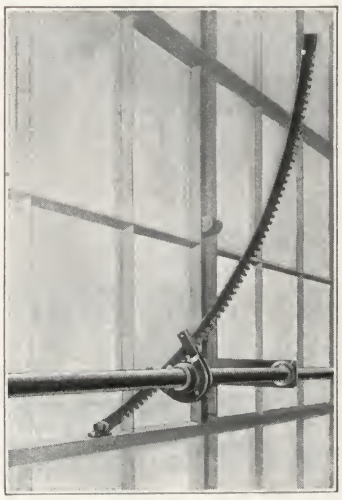
DAYTON DIRECT-ACTION WINDOW OPERATORS

Manufactured by
THE DAYTON GREENHOUSE MFG. COMPANY
FORMERLY THE T. J. CALLAHAN COMPANY
DAYTON, OHIO

Product

WINDOW OPERATING APPARATUS, hand and electrically controlled, for steel or wood sash in factories, foundries, machine-shops, central stations, powerhouses, theaters, churches, gymnasia, exhibition buildings, etc.

Also special types for greenhouses and sludge bed covers. For our page on Greenhouses, etc., see Manufacturers' Index.



Dayton Direct-Action Operator
Showing the convex rack and pinion operating arm

Types

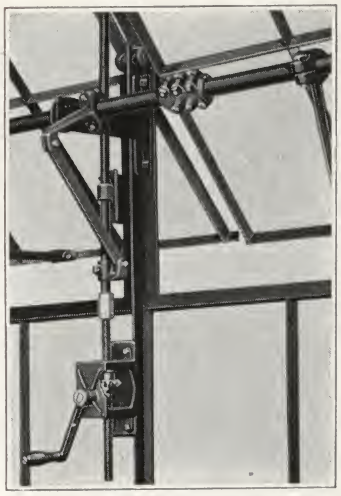
The 500 Series comprises manually operated open type powers handling shorter runs of windows. Easily adapted to average conditions.

The 700 Series has manually operated powers, chain or shaft drive, for long runs of either top hung or center pivoted windows. Gears enclosed in case packed with grease.

The 800 Series consists of manually operated powers using endless chain drive. Powers operate tension shaft for top hung continuous sash.

The 900 Series of motorized drives is the ideal sash control providing easy and convenient ventilation over large areas of floor space.

Large runs of sash are operated at the touch of a button from one central control station.

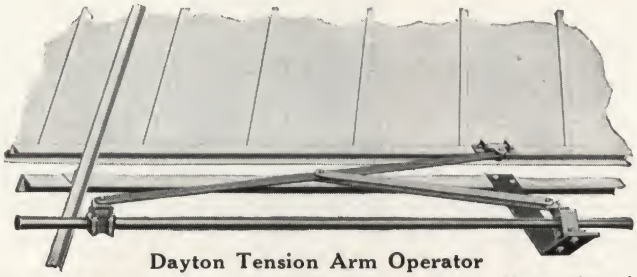


Dayton (Screw Type) No. 1203 Light Duty Operator

No. 1200 Series Screw Type Operator

The No. 1200 screw type window operator is small yet sturdy. It is equipped with a steel and bronze mitre gear and machine cut ¾-in. diameter double thread screw, thrust bearing automatic stop and detachable crank handle or chain wheel as required. All lever arms are of malleable iron with steel connecting rods.

The Dayton screw type operator is guaranteed and it is recommended for short multiple bay installations because it provides the utmost in a neat, convenient and durable window operator.



Dayton Tension Arm Operator
Windows are opened and closed by toggle lever arms. Manual force is applied by endless chain

Dayton Direct-Action Principle

The principle employed by these operators consists of a pinion gear fixed to the line shaft in a self-aligning yoke or housing opposite the hinged sash. The teeth of the pinion engage a circular cut steel arm or rack of any length needed. The distance from the center of the line shaft to pitch line of the rack is only 1¼ in., and this distance is always constant. Torque in line shaft is thus reduced to an absolute minimum.

The short leverage permits operating stations to be located most conveniently in the building. All sash operate to the same height (as much as 90° opening) without any variation along the line and are pulled down easily, yet firmly. An absolutely tight close-down is always assured, preventing dripping, drafts and loss of heat.

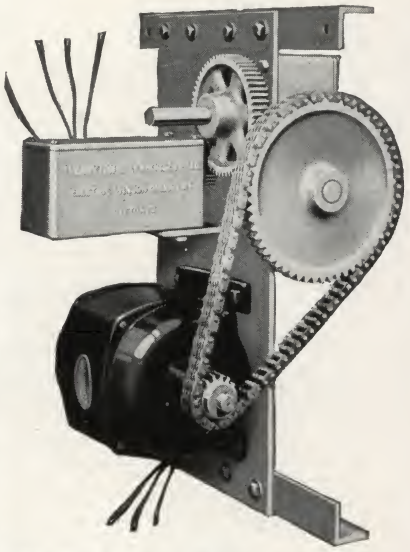


Monitor Sash with 3 Runs of Top Hung Continuous Sash Showing Dayton Direct-Action Operators Easily Controlled by Dayton Electric Power
Insert—Panel of push buttons operating all sash in this building

Long runs of top hung or heavy center pivoted sash may be operated with a minimum of operating stations, centralizing the control and substantially lowering cost of installation.

All Dayton equipment is painted in gray enamel. Only the best materials are used. Properly tempered steel shafting of large diameter and analyzed castings are used throughout to withstand the necessary loads.

Installations for center pivoted sash can be arranged to reverse up to 120°, for top hung sash up to 90°, and for bottom hung sash up to 60° from the closed position. This gives convenient accessibility for washing or cleaning the glass.



Dayton Electric Power for Dayton Direct-Action Window Operators

Engineering Service

The range of types offered in Dayton operators is such as to meet all demands. Our new catalogue gives complete information. Send for it.

Our Engineering Department will gladly co-operate and advise with you or your contractors. Your inquiry is solicited.

THE GIBSON & KIRK COMPANY

Manufacturers of Special Hardware and Window Operators

209-229 Key Highway
BALTIMORE, MD.

Products

SASH OPERATING MECHANISM, highly suitable for office and bank buildings, also theatres and any other places where an attractive and well-designed operator is required.

Our Latest in Window Operators—Type 5

This type of operator combines all of our latest improvements as regards both design and reduction in cost of installation. The essential facts carried in mind in re-designing this operator were to make it as inconspicuous and neat as possible as well as make provision for decrease in installation cost and also satisfactory operation.

We list below, in their proper order, the various features which have been improved:

As to Appearance—The ¾-in. *Solid Horizontal Rod* used instead of the usual 1-in. o.d. pipe or tubing.

All Square Head protruding set screws replaced by set screws of the *Socket Type.*

Entire *re-designing* of all arms and brackets to reduce obstruction to passage of light.

Vertical Rod is ½-in. square and connects up with a Gear Box of such design as to add considerable to appearance.

Set Collars on the Vertical Rod have been replaced with several small *Polished Bronze Stops.*

As to Installation and Construction—*Gear Box* is mounted on a separate plate which is the only part directly fastened to wall by expansion bolts located as far as possible from edge of plate. This prevents any chipping of the plaster or marble beyond edge of box when attaching this plate. Gear box is mounted on plate by means of four machine screws which makes the box readily removable.

Joint between box and plate is disc ground, which allows a paper gasket to be used to prevent any grease in box from running down wall in hot climate, or where it is near a radiator.

Gears in this box are Cast Manganese Bronze, good for 60,000 lbs. per sq. in., which are run together under pressure before assembling, burnishing the teeth and making a very smooth contact.

All *Window Links* are adjustable to allow for final adjustment of windows or any future adjustment necessary.

All *Vertical Rod Brackets* are of an adjustable type, which provides for any slight irregularity in the wall.

Adjustable Wall Brackets are provided where required.

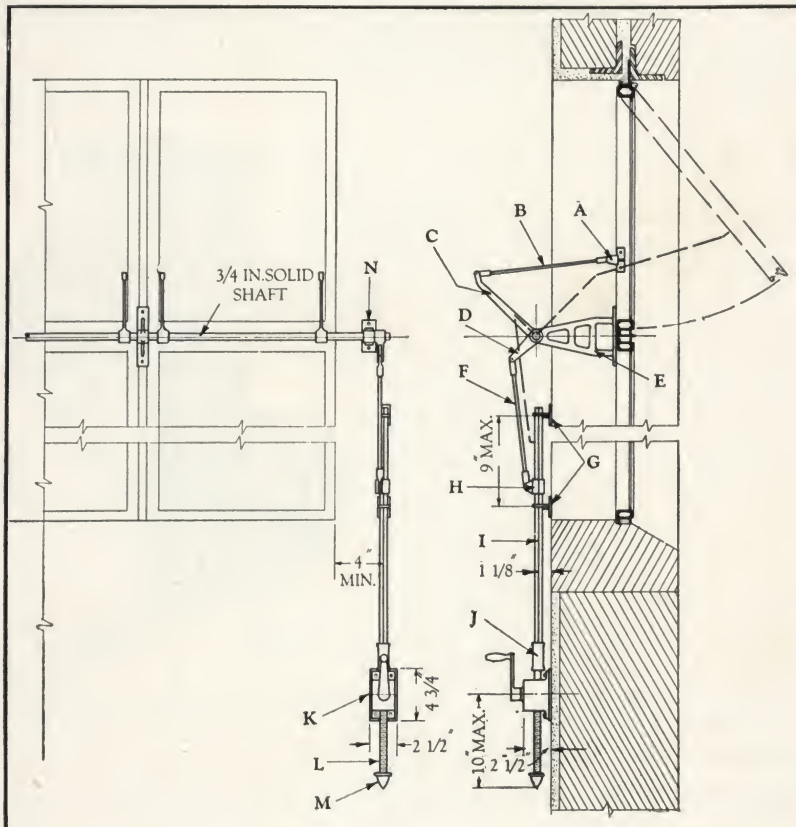
General Details

On particular jobs where it is desired to carry out a certain general effect to conform with the rest of the details, special arms and brackets can be made to suit. Any material in whatever finish wanted can be furnished.

Service

In spite of the various improvements and general appearance of the operators, our prices will be found to meet competition. We are prepared to submit drawings to the architects for preliminary design or quote and furnish drawings to window manufacturers at any time. Our facilities and service are always at your disposal.

NOTE: *The simple general arrangement shown below was purposely proportioned to show in some detail the relationship between the various working parts. Numerous other arrangements can be made both in concealed and exposed types.*



DETAILS OF STYLE 5 OPERATOR

STYLE NUMBER REFERS TO DESIGN OF PARTS, NOT TO GENERAL ARRANGEMENT

- A - WCA-1 FOR INSIDE BEAD GLAZE, WCF-1 FOR OUTSIDE PUTTY GLAZE.
- B - ADJUSTABLE WINDOW LINK, ROUND ROD.
- C - WINDOW ARM, STANDARD SIZES 6 TO 12 INCHES.
- D - OPERATING ARM, STANDARD SIZES 3 AND 4 IN.
- E - MAIN BRACKET, STANDARD SIZES 6 TO 14 IN.
- F - OPERATING LINK, ROUND ROD, STANDARD SIZES 10 AND 12 INCHES.
- G - VERTICAL ROD BRACKET 5/16 IN. ADJUSTMENT.
- H - OPERATING KNUCKLE.
- I - VERTICAL ROD, STANDARD SIZES 1/2 IN. SQUARE, 1/2 AND 5/8 IN. ROUND.
- J - VERTICAL ROD CONNECTOR TO SCREW.
- K - GEAR BOX WITH BOTTOM PLATE AND HANDLE.
- L - SCREW, STANDARD SIZES 1/2 AND 5/8 IN. ROUND WITH ACME THREAD.
- M - SCREW END.
- N - ADJUSTABLE WALL BRACKET 1 IN. ADJUSTMENT.

LORD AND BURNHAM COMPANY

SASH OPERATING DIVISION

Graybar Building, NEW YORK, N. Y.

FACTORIES: IRVINGTON, N. Y., DES PLAINES, ILL., ST. CATHARINES, ONT., CANADA

BRANCH OFFICES IN PRINCIPAL CITIES

Products

SASH OPERATING MECHANISM of the highest grade, architecturally suitable for

Banks	Churches	Theatres
Office Buildings	Libraries	Public Buildings

SASH OPERATING EQUIPMENT for

Factories Power Houses Industrial Type Buildings

SCREW THREAD OPERATORS for Transom Sash

For our pages on Greenhouses see Manufacturers' Index.

Estimating and Advisory Service

Our engineers are prepared to give full information regarding our products and their uses, to offer suggestions as to arrangements, to quote prices, etc.

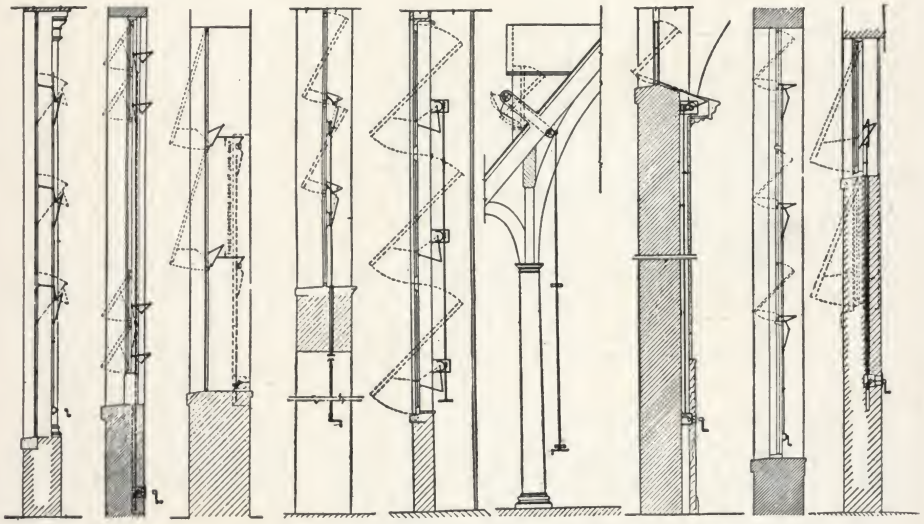
These mechanisms are especially made to meet individual building conditions. Each problem is carefully studied by our engineers. Drawings showing the most practical solution are prepared for architects' approval.

Architects secure co-ordination of architectural treatment and utility, by using this service in the preliminary stages of their design.



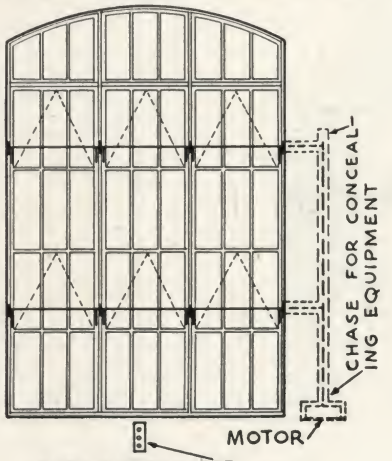
Sash Control in Large Window

May be either exposed or concealed and holds sash securely at any desired angle

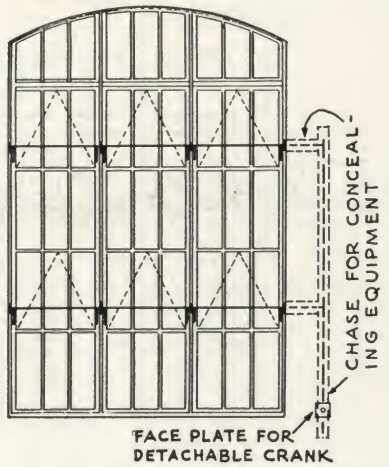


Arrangements of Mechanisms Which Solved Various Problems of Sash Operation

We have prepared a series of drawings and photographs showing solutions of sash operating problems. These include schools, churches, banks and other public buildings. The ideas illustrated will be found of help to architects and designers. This series and our catalogues in an American Institute File Folder gladly sent upon request.



MOTOR OPERATED



HAND OPERATED

BALANCE-LIFT DOOR CO., INC.

124 West 31st Street
NEW YORK, N. Y.

BALANCE-LIFT GARAGE DOOR EQUIPMENT

General Description

Balance-Lift Equipment is made primarily for the garage entrance to new residences, and for modernizing garages for older types of town, suburban, or country houses. It also has various commercial applications. The mechanism is sold either with or without the door.

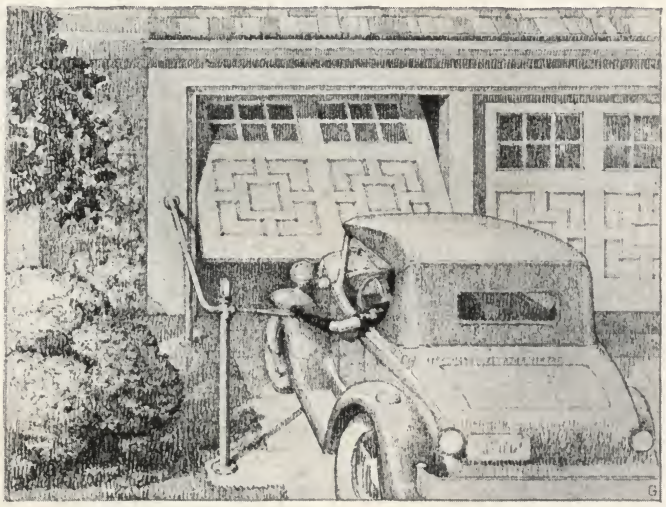
Balance-Lift Equipment should be specified wherever the *motor entrance* is recognized as an important feature, serving the convenience, safety and satisfaction of the owner in a modern way.

Where the garage entrance faces the front, Balance-Lift equipment is desirable, because the door can be made in any pattern to harmonize with the general design. Where the garage is incorporated in the house, dignified appearance is combined with *silent operation.*

With Balance-Lift the maximum width of clear opening is made possible and the door goes up out of the way, and also operates without difficulty in any width up to 16 ft.

Where the garage is heated, the ease in opening and closing as often as necessary will be found of great advantage. Where the "stormy weather" value of the overhead principle is a consideration, Balance-Lift protects from wind and snow.

Where there is a separate entrance for each car, Balance-Lift also provides for *semi-automatic* operation in opening and closing, by means of a pull-cord or handle accessible from the drivers seat when the car is on the driveway. This extra service is accomplished by simple mechanical action, and involves no power or maintenance charge.



Balance-Lift Equipment for Semi-Automatic Operation for Single Door

Balance-Lift equipment is not merely hardware, but a strong, perfectly balanced mechanism for opening and closing the garage door without friction, noise or shock. Its movement is *smooth, silent, safe.* The door rises without effort, and comes down to the fully closed position with a gentle gravity action.

Operation

The Balance-Lift movement is obtained by a double-pivoted carriage which lifts the door up and overhead, at the same time turning it over flat under the ceiling. The carriage extends horizontally across the middle of the inside of the door, and is attached to the door by loose-pinned connections. The arms of the carriage swing from heavy ball-bearing pivots mounted on the side-walls (or on 2x2 channel uprights furnished with the mechanism, where necessary).

The door, which may be provided with the mechanism or furnished by the owner, may be of any stock pattern or special design. Wide doors are made up of two or more sections fastened together side by side, with special finish strips at the joints. The door is firmly supported on the cross-bar of the carriage, so that no strain comes on the door.



Showing Mechanism with Door Raised



Showing Mechanism with Counterweight Box Removed

The turning movement of the door on the carriage is controlled by guide arms eccentrically pivoted from the main arms.

The whole weight of the door and carriage is perfectly balanced by counterweights operating on cables or chains which pass over ball-bearing pulleys and compensating guides. The carriage floats on these cables or chains so that the door moves easily all the way up and down. There are no springs, hinges, rollers, or tracks, nor rubbing parts. The door rides true and free in the opening, and is adjusted to remain at rest in the open or closed position. The operation is *noiseless.*

Balance-Lift equipment will swing clear over the top of any standard passenger car, when the car is just inside the garage, with the rear bumper at the door. The bottom of the door will lift free over ordinary snow-fall. Stops are provided which seal the edges of the door when closed, without friction in opening.

Locking is by means of a mortise dead bolt, operated by a cylinder lock on the outside, and small knob on the inside. When no mechanical operator is ordered for control from the automobile, the door is provided with a handle outside and short pull-cord inside. An extension pull-cord can also be provided to operate the door from any point inside the garage.

Counterweight boxes may be located wherever convenient in rear of the pivots, or at rear corners of the garage.

Balance-Lift equipment requires clear wall space extending back 40 in. from the inside of front wall; any door or window in the side wall should be placed back of this point. The door will operate with a vertical clearance of 8 in. from top of opening to ceiling. Jambs should be plain plank jambs, with opening 1 in. wider than the door. Jambs should return at least 5 in. from the side walls.

Sizes

We furnish equipment for three types of opening, as follows:

(a) One door 8 ft. wide.

(b) Two doors with post between.

(c) Extra wide door up to 16 ft.

Standard door heights are from 7 to 8 ft. Special sizes and types of doors can be furnished.

Cost

We quote prices for Balance-Lift equipment completely installed, with or without door. When durability and quality are considered, the cost will compare favorably with others.

Our one-car unit with outside operating handle—*controlled from the car*—can be furnished at a cost far below electric operation. Illustrations of various models will be sent on request.

Our two-car door without center part works with great care, and saves space and expense.

Information Required

Inquiries should state thickness of door, width and height of openings, distance from jamb to each side wall, and vertical clearance above door opening. Also state whether equipment is to include door and mechanism, or mechanism only.

We invite architects to consult with us, on any garage door problem.



Showing Operation by Pull Cord at Side of Door Without Handling Door



Old Garage with Two Sliding Doors and Post Removed and Free Opening Provided



Unusual Garage Door Installation for Residence at Manhassett, Long Island, N. Y.
FREDERICK L. ACKERMAN, Architect

BARBER-COLMAN COMPANY

Manufacturers of Overhead Type Doors and Electric Door Operators

ROCKFORD, ILL.

For our pages on Temperature Control, see Manufacturers' Index

THE BARCOL OVERDOOR



OVERdoors on Filling Station

Barcol OVERdoor is an improved type of overhead or upward-acting door, giving a perfectly balanced, easy operating, and positive closing action under all weather conditions. The operation is "as simple and easy as opening and closing a window." Door is designed for residence and public garages, filling stations having greasing and washing service rooms, factories, fire stations, warehouses, bakeries, terminals, etc. It is available in four stock sizes: 8x7 ft., 8x7 ft. 6 ins., 8x8 ft., and 8x10 ft. Special sizes up to 20 ft. wide and 15 ft. high can be provided in the standard design. A "wicket" door—a small hinged service door in the OVERdoor—can be supplied when required. Special devices are provided for abnormal headroom conditions. Proper reinforcement is used on wide doors. Glass may be had in any number of sections. Special design doors—to match architectural style of building—can be made to order. Removable mullions are available when required. Installation and service are provided by branch offices and representatives in all principal cities.

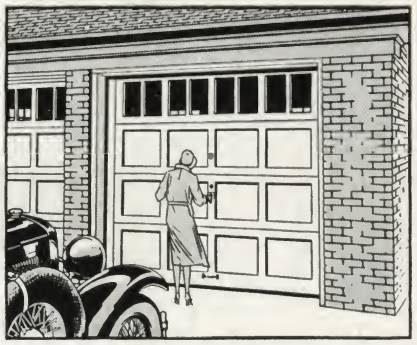
Closing Action—A special closing action is used only on Barcol OVERdoor. When door is opening (Fig. 1) triangular hinged roller plates are pulled down to hold door away from the stop strips with ½-in. clearance along full height of the door. When door is closed (Fig. 2) the roller plates are swung up, thus pushing the door uniformly against stop strips on all sides. Because of this special closing action, Barcol OVERdoor does not bind or stick while it is in motion, yet will close positively, snugly and uniformly.



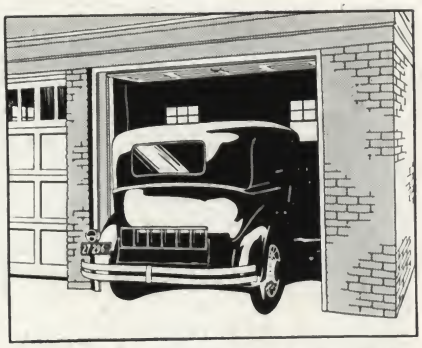
Fig. 1
Cross Section
Door Opening



Fig. 2
Cross Section
Door Closed



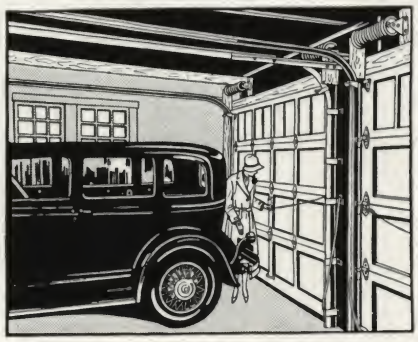
To Open Barcol OVERdoor, Unlock It and Raise Lifting Handle



Full Clearance, Because OVERdoor Is Up, Out of the Way



A Pull on Assist Cord Starts OVERdoor Downward



A Downward Push on Locking Handle and OVERdoor Is Closed—and Locked



OVERdoors on Apartment Garages

Two Models

Barcol OVERdoor is available in two general styles, designated as Models 50 and 75. The difference in the two models is chiefly in refinements—Model 75 having more of these, such as cadmium-zinc-plated hardware, rubber astragal, priming on wood sections, etc.

Features

Barcol OVERdoor is balanced for convenient and minimum-effort handling by means of tailored "twin torsion" counterbalancing springs—the only effort required in opening or closing the door is to overcome friction.

Standard wood sections are made of full 1¾-in. Western pine stiles and rails and 3-ply fir panels. All joints are mortised, glued with waterproof glue, and steel pins driven through the tenons.

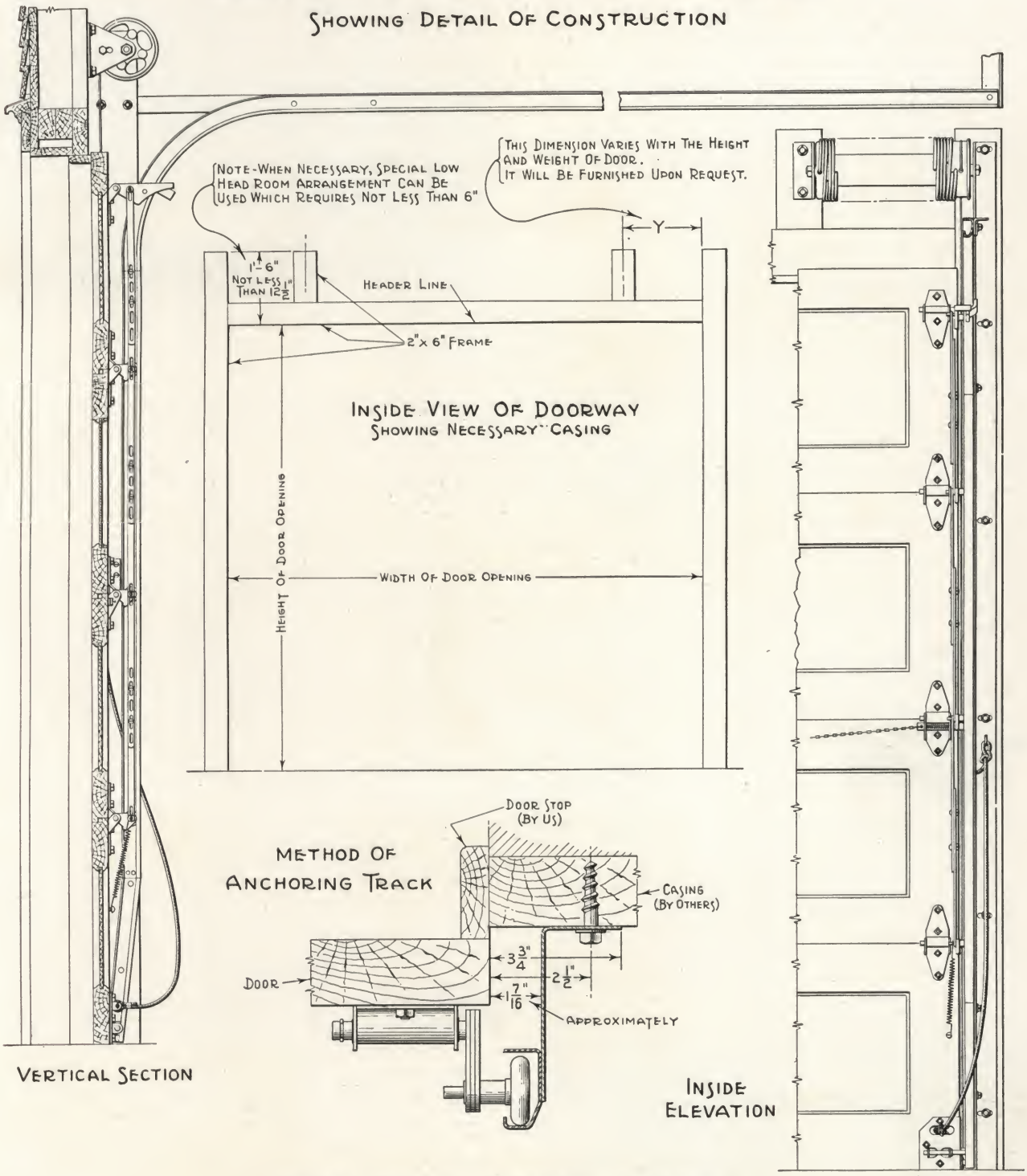
Rollers run on ball bearings and are specially made to stand a great deal of abuse. Hardware is made of best materials. Hinges have tubular pin which gives a large bearing surface. Locking device is provided with movable catches adjusted readily if floor level changes. Door may be unlocked and opened from either inside or outside.



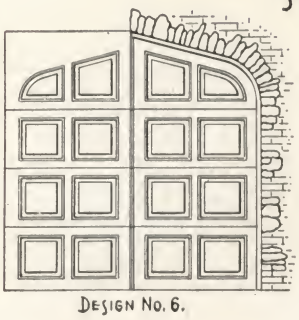
Large OVERdoor in Factory

BARCOL OVERdoor MECHANISM AND CASING

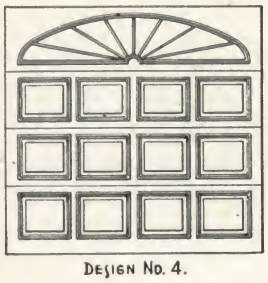
SHOWING DETAIL OF CONSTRUCTION



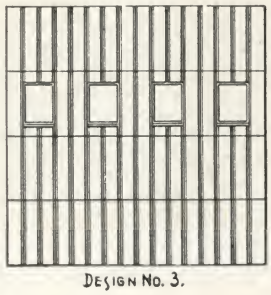
SPECIAL DESIGNS OF BARCOL OVERdoors



DESIGN No. 6.



DESIGN No. 4.



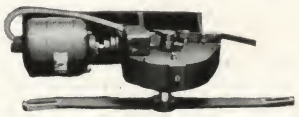
DESIGN No. 3.

BARBER-COLMAN ELECTRIC DOOR OPERATORS

The Operators

Barber-Colman Electric Door Operators are devices for opening and closing garage doors, and are designed for operation by either switch control, "electric eye" control, radio control, or any combination of these. They will handle nearly all types of swinging, sliding, or overhead type doors as indicated in the diagram. Barber-Colman Electric Door Operators are simple, compact, quiet in operation, safe, economical, durable, and dependable. Electric door operators have the following advantages: they save time, save heat, add to the convenience of the owner, increase door life, decrease door maintenance expense, safeguard health of occupants of the building, modernize the building, and protect the users of the building and equipment it contains. Electric door operators can be advantageously used in residence and public garages, service stations, warehouses, loading platforms, terminals, factories, fire stations, gates, etc. Barber-Colman operators have proved their capacity for satisfactory service in all of these types of installations.

The main units of a Barber-Colman Electric Door Operator are: motor, centrifugal clutch, speed reduction mechanism, limit switch, and linkage to connect to the door. Operation of motor is governed by the switch (or other) control working in conjunction with the limit switch on the operator. A centrifugal clutch is used to transmit the power because: it allows motor to have the advantage of starting under "no load" (thus reducing sudden heavy current drains and consequent dimming of lights in the circuit); it will operate uniformly regardless of changes in humidity and temperature; it will slip under an overload and thus protect the equipment, and it cannot be tampered with and thrown out of proper adjustment. Speed reduction mechanism is made of accurately machined gears which run in oil to minimize noise and provide a lasting, efficient drive for sprocket or arms which carry the motion to the door leaves. Limit switch, which prevents overrun of the operator and provides accurate stopping of door in the open or closed position, is of the normally closed type with an over-center device to give a quick make and break, and is readily adjustable to the proper stopping points. Linkage varies with type of door to be operated. In addition, a mechanical release is provided which disconnects the operator from the door and permits manual operation when required.

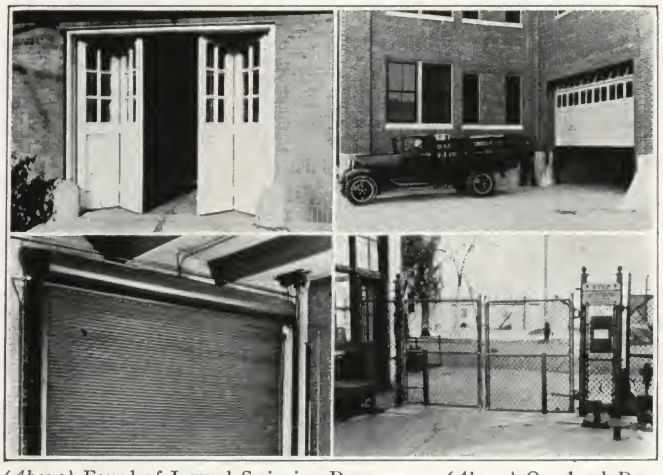


Model V Motor Unit for Swinging and Sliding Doors



Model M Motor Unit, Overhead Type Door Only

All parts of the machine are easily removable and are standardized for rapid replacement. Motors to meet any current characteristics can be furnished. A special operator is available for use on swinging gates (see illustration). Special "delayed time control" devices can be supplied to meet various conditions. One operator model is adapted to use on steel rolling doors (see illustration). Engineering service and detailed advice regarding any particular installation, proposed or under construction, will be supplied promptly by BARBER-COLMAN COMPANY.



(Above) Four-leaf Inward Swinging Door *(Above)* Overhead Door
(Below) Steel Rolling Door *(Below)* Factory Gate

Various Doors Equipped with Electric Operators



Door Operator with Radio Control

The signal is sent from the car approaching the garage. The doors open automatically and, at night only, the garage lights are turned on

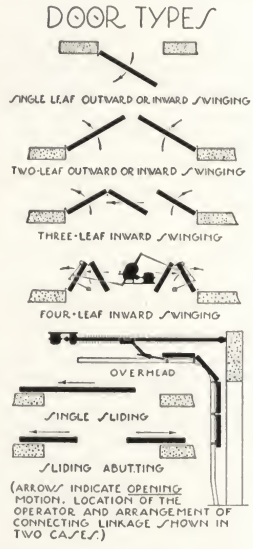
Radio Control

How It Operates—The Barber-Colman Radio Controlled Door Operator makes possible the opening and closing of garage doors by means of a radio transmitter operated from the instrument board of a car. Coded signals make it private. A series of radio impulses transmits a message that will open only the door for which they are coded. At night radio signal from car not only opens doors but also automatically turns on the garage lights. Dependability and reliability proved by several years of satisfactory operation in many installations.

Transmitter—Each car which is to control a door is equipped with a transmitter that broadcasts a particular series of impulses. A pull on the transmitter knob conveniently placed on the dashboard causes this code to be sent automatically.

Power is drawn from the car battery and consumption is negligible. The timer, which governs transmission, is encased in a small box and clamped back of the instrument board. The spark coil unit, enclosed in a watertight box clamped to the main frame, furnishes the high frequency current. This current flows through the transmitting antenna which is suspended under the car in such a manner that there is little danger of mechanical injury. The only part of the transmitter in evidence is the knob on the instrument board.

Receiver—The receiver unit is contained in a box about 1 ft. square and 1½ ft. long mounted on the wall inside the garage. Connected to it is the receiving antenna which consists of a wire buried in the driveway. The receiver analyzes the coded signal from the car, and, if it is the proper code, trips off the electric operator which opens and closes the door. A selecting mechanism in the receiver makes it responsive to two different codes for garages having two doors. The receiver requires 110-volt, 50 or 60-cycle a-c., the power ordinarily furnished for house lighting. The mechanism is simple in design and reliable in operation.



Switch Control

Control Switch—One control switch is furnished with each operator as standard equipment.

Driveway Post—Conveniently installed at the side of the driveway for operation without leaving the car. The lock-switch in post head makes a contact when key is inserted which opens the doors. A toggle switch, not locked, is also provided in post head by which door can be closed but not opened.

Outside Switch—This switch, like the driveway post, embodies the lock switch for opening and the free switch for closing. It may be used in place of the post where a wall or fence affords a convenient location.

Driveway Plate—Contact made with flexible diaphragm by weight of car. Placed where wheel of car approaching garage will pass over. Avoids necessity of stopping car though is generally wired to open the door only. This is particularly adaptable for industrial and commercial uses.

ESTABLISHED 1846

TELEPHONE
STillwell 4-3880,
3881, 3882

CORNELL IRON WORKS, INC.

3610 to 3630 13th Street, LONG ISLAND CITY, N. Y.

For Local Representatives in Principal Cities, Consult Telephone Book or Write Home Office for Address

Products

CORNELL FLOAT-OVER DOORS; overhead acting. Tubular Steel Type. In wood: Deep Panel Type, 1¾ Standard Type. Equipped with Cornell Feather Touch *Self-adjusting* Weatherstrips and the Cornell System of Counterbalance.

For Cornell Rolling Doors and Cornell Rolling Grilles, see Manufacturers' Index.

FLOAT-OVER

Will not warp, twist, sag, splinter or decay. From but 0% to 10% heavier than wood. Operated at a touch. *The* practical fireproof and burglar proof overhead acting door. The remarkably reasonable first cost and the long durability should appeal to those desiring lasting economy.

Since 1846

CORNELL IRON WORKS, INC. is the oldest manufacturer of overhead acting rolling doors.

The *Float-over* Doors are new in design and principle, but profit by the result of the company's long experience.

Application

Wood or steel *Float-over* Doors recommended for openings, exterior or interior, from 8x7 ft. to the largest sizes. All-steel *Float-over* Doors are also used in masonry buildings or where hazard of fire and burglary must be controlled and great durability is desired. Deep panel *Float-over* Doors are recommended for the larger openings and in positions exposed to high winds. All types recommended where weather-tight installations are desired.

Operation

Open upward, with a slight touch, and close downward, with a slight pull—affording free and clear openings. Balanced with fine oil tempered torsion springs, the doors ride on ball bearings, at all points, in rigid and strong cold-rolled steel tracks. High test cables winding on machine grooved drums, lift and lower doors in smooth silence.



Cornell Tubular All Steel Float-over Door

Light as wood—easy to operate. Durable and fire-proof



Cornell Standard Wood Float-over Door to Left, and Cornell Deep Panel Float-over Door, to Right

Cornell Standard FLOAT-OVER Doors

Carried in stock for openings 8x7 ft. 6 ins.; 8x7 ft. and 8x8 ft. Six panels wide and four sections high. Top sections for glass.

Tested

Float-over Doors were tested and analyzed by the Columbia University Department of Civil Engineering. Our claims that Cornell Doors resist wind pressure and withstand sag, etc., were *proved* by these tests. Copies upon request.

Exclusive Features of FLOAT-OVER Doors

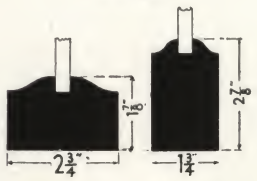
Feather Touch Self-adjusting Weatherstrip—

A confoundingly simple and certain acting weatherstrip that seals the *Float-over* Doors against rain, snow and wind. Does not hinder ease of operation. Each panel self-adjusting, independently of the others. Made of two cold-rolled galvanized interlocking channels, set one within the other, actuated by springs.

Cornell Counterbalance—

This system follows the design used in the time-tested Cornell Rolling Doors. The absolute balance required for *each* door, of varying size and shape, is scientifically determined and applied.

Double Acting, Double Use Lock—A Yale cylinder lock functioning through a heavy bolt can be set in closed or "ventilating" positions.

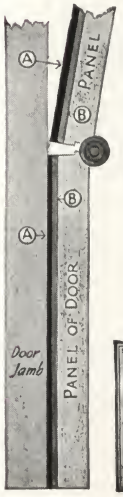


Deep Panel — The greater the thickness the greater the strength

Standard

Cornell Deep Panel FLOAT-OVER Doors

Utilize same lumber as any 1¾-in. standard door, but the 2¾-in. thickness of rails are *set horizontally* (see diagram to right) and the 1¾-in. thickness vertically—just the reverse of other doors. Doors are four times as strong. Resist wind pressure and withstand sag. *Cost no more and weigh no more than standard doors.*



Cornell Tubular Steel FLOAT-OVER Doors

Made on frames of 2-in. cold rolled, galvanized copper bearing steel tubes. Gauge from 22 U.S. to 16 U.S. depending on width of opening.



Feather Touch Weatherstrip

Action of spring forces section (A) of weatherstrip, against jamb absolutely sealing any gap that would otherwise permit the entrance of cold air, wind, rain or snow

General Data

Doors are shipped in sections, with hardware attached to assure quick assemblage. Sections are about 24 ins. high, glass panels about 12x18 ins. Any type of glass supplied, and entire door arranged for glazing if required. Large doors are furnished with chain and gear, or hand crank, operators. Cornell push button, remote control motor drives are available at additional cost. A shop prime coat is used unless otherwise specified. Standard headroom required is 15 ins. but can be reduced to 12½ ins. if necessary.

Free Service

Our Engineering Department will make drawings and supply information regarding any proposed operation.

Literature and complete data sent upon request.



Rear View of Float-over Door

Showing Cornell Counter-balance, standard hardware and equipment

COBURN TROLLEY TRACK MFG. CO.

HOLYOKE, MASS.

BRANCHES IN BOSTON, NEW YORK and PHILADELPHIA

Products

Sliding and Folding Garage Doors and Hardware.
Overhead Garage Doors and Hardware.
Metal Covered Doors (See Manufacturers' Index.)
Folding Partition Doors and Hardware.
Overhead Conveying Equipment.
Rolling Ladders.

COBURN GARAGE DOOR SETS

Furnished with or without Doors

Folding Garage Door Sets

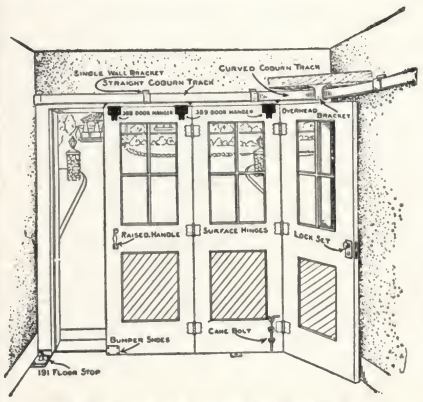
Doors are hinged to the jamb in groups of two or more, and supported at the upper outer edge by ball bearing swivel hangers rolling in Coburn track. The doors fold to the side, either in or out, fit tightly all around, and will not sag. Especially desirable where full width opening is required.

Around-the-Corner Sets

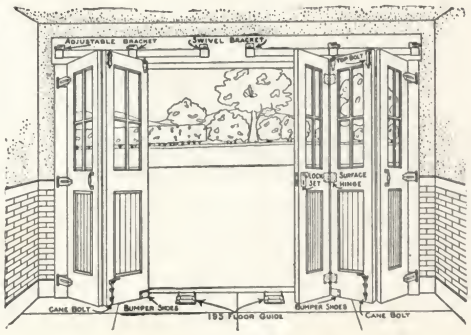
Doors are hinged together and roll around on Coburn curved track so that they lay against wall when open. Doors fit tightly all around when closed and take up exceedingly small space when opening.

No. 750 Track and Hangers (Patented)

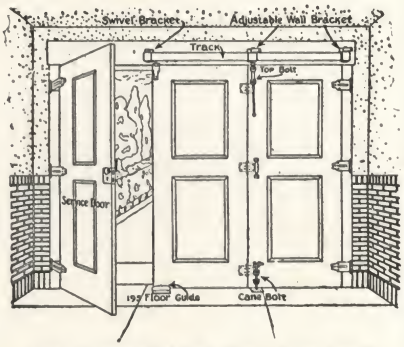
The Coburn No. 750 type hangers are made for all sizes and weights of sliding doors, ranging from the 2 in. size for light doors up to 15 in. size for the very heaviest doors. The wheels are made of machined cast iron, mounted on New Departure hardened steel ball bearings. The pendant is made of heavy forged machine steel. The wheels run on a specially designed drawn steel track, shaped to reduce rolling friction to a minimum. This steel track is fastened to the bottom flange of a channel iron for single run, or to the bottom flange of each side of an I beam for double run. Triple and quadruple runs can also be furnished by adding either another channel or I beam. The standard hanger has vertical and lateral adjustment; another style has swivel ball bearing pendant for folding doors and for use on curved track. These hangers are noted for their ease in operation. They are easy to install, and ideal for wide openings for bus terminals, airplane hangars, etc.



The Coburn Around-the-Corner Set

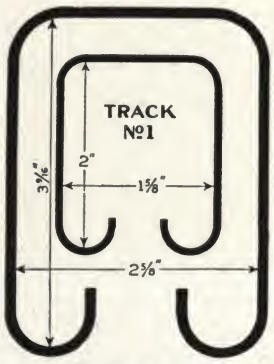


Five-Door Set for Two-Car Garage



The Coburn Folding Door Fitted with Coburn Hardware

COBURN TRACK SECTIONS AND HANGERS



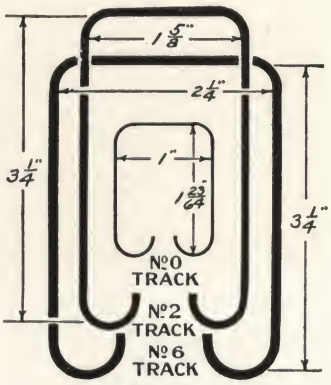
TRACK № 4
Half Size Sections



No. 750 Track and Hanger



Hanger No. 137
One of many styles



Half Size Sections

Our Complete Catalogue and Supplementary Circulars Are Yours for the Asking

EASY-LIFT OVER DOOR

Series No. 2000

Standard doors are 1¾ in. thick with regular flat panels and double thick clear glass.

This set is particularly recommended where floor space is limited, as it takes up very little room in operating, and is up out of the way when open. Note how close the car can stand when door is partly open. The door fits tightly on all sides when closed, and yet opens and closes with extreme ease.



Easy-Lift Door in Open Position

The Coburn Easy-Lift Door is designed to meet the demand for an Overhead Type Door of simple and substantial construction. The hardware is exceptionally rugged, being built to withstand the severe service required of industrial installations.

The door itself is sturdily constructed of white pine, and has only two parts, eliminating a number of joints.

Note that doors are balanced by means of counterweights; a patented compensating device maintains perfect balance at all points. No springs to stretch or break, so counterbalance cannot get out of adjustment.



Perfect Balance at All Points

The set described above is adapted to openings up to 10 ft. in height. For larger openings, the 3000 series is recommended.

Series No. 3000

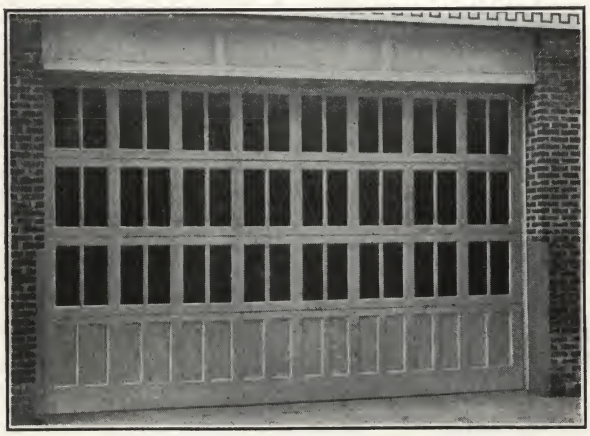
The set pictured here is of the extra heavy type for large commercial and industrial openings. The same principle of counterbalancing is used on this door as on the No. 2000, with the same trouble free combination of counterweights and steel cable. Weights operate in guides and are also enclosed in pressed steel boxes.



All cable sheaves and door rollers, also the compensator, are mounted on ball bearings.

The guides and supports are made up from standard structural members of ample proportions, resulting in a set of hardware which is exceptionally rugged.

The doors are made of selected pine, 1¾ in. thick or 2¼ in. thick, depending on size of opening, and are rigidly reinforced by angle irons to eliminate sagging when in open position. The panelling is designed to meet special requirements, and may be either part or wholly glass.



All of these Easy-Lift Doors can be furnished with electric operators at a reasonable cost. The standard hardware for all sets is made so that electric operators may be added later if desired.

Blue Print details will be submitted on request.

Each set is packed with complete directions and diagrams for erection.

CRAWFORD DOOR COMPANY

Manufacturers of Overhead Operating Doors and Hardware for Residence Garages, Service Stations, Factories and Boat Houses

7881 Conant Road
DETROIT, MICH.

Products

This company maintains a complete line of equipment for overhead operation. The CRAWFORD DOOR COMPANY manufactures and distributes "ONE-PIECE" HARDWARE which may be applied to any standard pair of garage doors, old or new, plain or of special design and a mechanically superior SECTIONAL TYPE DOOR and HARDWARE. These latter doors may be had in solid steel for both private and commercial use.

The Company

The CRAWFORD DOOR COMPANY is one of the oldest concerns engaged in the exclusive manufacture and distribution of overhead-operating doors and hardware.

It is a responsible, financially strong organization, fully equipped to meet any problem in this field.

Distribution

The CRAWFORD DOOR COMPANY distributes its products through reliable building supply houses and lumber dealers who provide for competent installation and service. Close factory co-operation is assured.

Crawford One-Piece Hardware

This hardware is designated by the term "one-piece" to describe its function, i. e. that of operating a pair of doors overhead as one piece. It is in this function that Crawford Hardware offers a truly unique opportunity to architects.

By treating the garage openings as units in the general scheme of the house, the architect's choice of design is unlimited.

In the open position doors hung with Crawford One-Piece Hardware are entirely inside the garage. There are no awning-like projections.

An exclusive patented feature is the two inch vertical lift which allows the doors to rise straight upwards for two inches before swinging out and inward. This two inches of play permits the doors to fit tightly against the floor at all times and to clear those obstructions usually encountered in the straight outward movement.



By using a single Crawford Door across the entire front of a two car garage, the center post can be eliminated and the whole garage built narrower without sacrificing adequate clearance for the cars.

Crawford One-Piece Hardware is designed along sound mechanical principles and places no strain on jambs or door. It is quickly and easily installed as all possible parts are assembled on the hanging styles at the factory.



Installation Requirements—It is necessary to see that all jambs are flush on the inside; that there is a minimum of three inches headroom (from top of opening) and that the center posts have a minimum width of six and one-half inches.

Crawford Sectional Doors

Crawford Sectional Doors and hardware are built with a number of superior mechanical features which provide for long life, quiet and easy operation, neat appearance and simple installation. The company supplies these doors in wood and steel. The steel doors may readily be painted to resemble wood.

Selected oil-tempered *torsion springs* operate the doors with a maximum of ease and a comfortable margin of safety.

Graphite impregnated rollers assure quiet operation and self-lubrication (for heavy doors and commercial work steel-tyred ball-bearing rollers are used). Self-aligning, cadmium plated roller brackets prevent the doors from binding. Steel cradle-type bottom corner brackets absorb all operating strain. Grooved drums prevent the special aviation grade cable from piling. A new, positive lock may be master-keyed with the house.

Installation Requirements—The size of the daylight opening is the size of the door. All jambs must be flush on the inside. A minimum headroom of 13½ in. is required on standard sizes, 15½ in. on all doors over 10 ft. high. The minimum width of center posts is 9½ in. for standard doors; High Lift doors need 12½ in., otherwise standard construction.

High Lift Doors

Crawford Sectional Doors and hardware may be obtained for such openings where it is desirable to raise the doors higher than the actual opening. This is especially true of service stations where hydraulic lifts are used. No "dummy" sections are required on Crawford High Lift Doors.

FARLEY & LOETSCHER MFG. CO.

DUBUQUE, IOWA

For Qualitybilt Hardwood Doors, "Farlite" Pre-finished Doors and Disappearing Stairways, see Manufacturers' Index

"WEATHERSEAL" GARAGE DOORS

PATENT NO. 1,876,798

Description—The "Weatherseal" Garage Door No. 800 is made to *fold* at top of opening, counterbalanced with a cast iron weight. *Minimum head room necessary is only 1¾ in. above top of door.* The limited ceiling space required does not interfere with lights, pipes, beams, partitions, etc.—a very important factor for basement garages. Door fits *against* the jamb and can overlap 2 ins. or less on either side and top, making installation easy in new buildings or remodeling jobs. Can be used in either frame or masonry walls. With steel jambs a wood casing is bolted to inside of opening.

Economical—Quantity production in our modern factory enables us to effect substantial economies in the manufacture of the doors and at the same time maintain a uniform high quality. The rugged hardware, strongly reinforced at all vital points, is comparatively simple and inexpensive, thus helping to reduce both the first cost and installing. The "Weatherseal" is designed and built to give a lifetime of satisfactory service at the lowest possible cost.

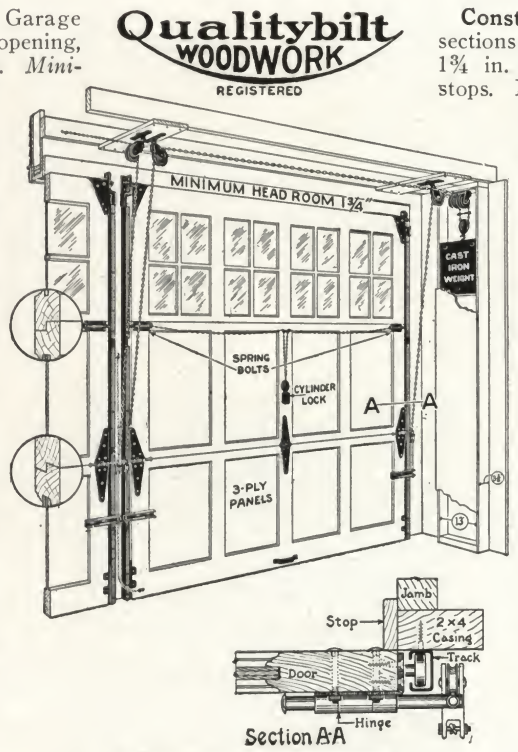
Advantages—The "Weatherseal" Garage Door will not bind or sag, yet seals the opening perfectly weatherproof all around. The door in closing is automatically forced tightly against the stops so that no weatherstripping is necessary. This makes the garage easy to heat. Snow and ice, swelling of door or raising of floor by frost will not interfere with its operation or prevent locking. *There are no springs to break or lose their tension.*

Operation—Operates from either side with equal ease. The upward folding action is smooth, safe and simple. The two lower sections fold against the upper section at top of opening, the top section being suspended on two hangers. This folding action is aided by the heavy weight which counterbalances the lower sections. The "Weatherseal" cannot freeze shut because, in opening, the first movement tips the bottom section back slightly, thus easily breaking any frozen contact along the bottom rail.

The closing action is just as simple as opening. No extra final effort is necessary to get the door down tight as with most overhead doors. This is because the door is much heavier than the counterbalancing weight and when closed in vertical position, the top section is released from suspension and serves as additional weight to hold the door down.

This is an exclusive "Weatherseal" feature.

Locking Device—*The spring bolts engage automatically in the track slots when door is closed. These slots run full length of the tracks so that any heaving of the floor or accumulation of ice does not prevent locking.*









Operation of Weatherseal No. 800

Construction and Materials—Made in three sections with clear White Pine stiles and rails, 1¾ in. thick, glazed SS, glass set with wood stops. Panels are three-ply Fir, dipped in pure Linseed oil before assembled in door. Waterproof glue is used throughout. Stiles and rails are joined with ⅝-in. hardwood dowels. In addition, hinges and brackets overlap and reinforce sixteen of the most important joints. Hinged intersections are deeply rabbetted. Each door furnished completely assembled, squared for the opening. Door hardware attached, ready to install.

Complete instructions for installing included with each door.

Clearance—Clearance between rear bumper of car and door is about 12 to 15 ins. Bottom panel requires 2 ft. 6 ins. clearance at a point 6 ft. from floor line to swing open. When folded up, doors reduce height of opening 7 ins., leaving 7 ft. 5 in. clear in 8 ft. openings and 6 ft. 11 ins. clear in 7 ft. 6 in. openings. Ceiling space 2 ft. 8½ ins. deep required for 8-ft. high doors when folded, thus permitting electric lights, beams, etc., near the opening.

Hardware—All hardware is furnished including a high grade Sargent cylinder lock. Hardware has a wide margin of safety and is made of steel and malleable iron, black japanned.

Pulleys are roller bearing with turned wheels. Chain is twisted link welded and galvanized. Weights are cast iron.

Space Required—Head room above door, 1¾ ins. or more. Minimum along either side of door 4½ ins. Mullion for twin openings 9 ins. or more, but if head room over door exceeds 6 ins., the mullion can be reduced to 6½ ins. wide. If weight box is to be placed behind mullion, the mullion must be 14¼ ins. or more. These measurements can be varied under unusual conditions and detailed layouts will be supplied by our engineers to fit any special installations for multiple openings.

Sizes and Designs—"Weatherseal" No. 800 is made in two stock sizes 8 ft. x 8 ft. x 1¾ in. and 8 ft. x 7½ ft. x 1¾ in. in the design illustrated. This design however can be varied on special order.

Large Doors—Large doors for service stations, warehouses, etc., can also be supplied.

These operate slightly different from the No. 800 style and details will be sent upon request.

Shipping Weight—*Shipped one door in a crate. Shipping weight of No. 800 is approximately 395 lbs. for 8 ft. x 8 ft. and 375 lbs. for 8 ft. x 7½ ft.*

Literature and Prices—Illustrated folder and price information sent upon request. Address S-33.

PROCTOR LUMBER CO.

THE KINNEAR MANUFACTURING CO.

36 Years Exclusive Door Manufacturing Experience

830-880 Fields Avenue
COLUMBUS, OHIO

BRANCH OFFICES

BOSTON, MASS., 294 Washington Street
NEW YORK, N. Y., 342 Madison Avenue
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WASHINGTON, D. C., 1040 Investment Building
PITTSBURGH, PA., 601 Oliver Building
NEW ORLEANS, LA., 730 Hibernia Bank Building
CLEVELAND, OHIO, 611 Union Building
CINCINNATI, OHIO, 528 Walnut Street
DETROIT, MICH., 812 Ford Building
CHICAGO, ILL., 128 No. Wells Street
KANSAS CITY, MO., 111 Railway Exchange
SAN FRANCISCO, CALIF., 405 Call Building

AGENTS IN PRINCIPAL CITIES

For Other Types of Kinnear Doors and Operating Equipment, see Manufacturers' Index

LOCAL REPRESENTATIVE

Rol-Top Door

A sectional door ideally suited for old or new garages, service stations, warehouses, factories, boat houses and other buildings. Slides up in the overhead position on steel tracks. Counterbalanced by spring and arranged for manual, chain or motor operation.

Manufacturing Facilities

Rol-Top is designed and built by engineers and mechanics who have specialized in the exclusive manufacture of doors for the past thirty-six years. It embodies construction features proved successful in the famous Kinnear Steel Rolling and Wood Doors, and also is backed by a well established organization with a past reputation for fair dealing and complete service.



Advantage of Use

Like other Kinnear Products, the "Rol-Top" is designed to give maximum door convenience and efficiency in addition to the highest quality construction. Sliding up over head, Rol-Top gives complete opening clearance and requires no costly floor or wall space. Counterbalanced by one or more precision tested springs, and moving on ball bearing rollers, it operates with the utmost ease the year around—snow, ice or sleet cannot impede it. Cars, or other objects may be placed within a fraction of an inch of door when operating. Neat, strong panelling design with or without the optional reinforcing truss members, adds to Rol-Top's life of service as well as attractiveness and architectural harmony to the opening. When open, Rol-Top does not give unsightly appearance of other types of doors; also, it can be quickly and economically installed by competent carpenter.

Any Size or Design

While Rol-Top is built in three stock sizes, i.e. 8 ft. 0 in. x 8 ft. 0 in., 8 ft. 0 in. x 7 ft. 6 in., 8 ft. 0 in. x 7 ft. 0 in., and is of the conventional panel design, it is built on special order in practically any size and of a great variety of woods and panel designs. Any number of light sections can be furnished. Also through the use of various auxiliary equipment and special construction Rol-Top can be adapted to various conditions. When in need of special sizes and designs send us sketch of needs and details will be supplied.

Construction and Materials

In addition to the basic construction features of Rol-Top, there are a number of optional features which may be had at slight additional cost, giving a variation of types to meet the preferences of different individuals. For the party desiring a substantial economical door, the standard model is suitable, but for the person giving more thought to the ultimate cost in longer years of service, the DeLuxe model will be preferred. Any combination of features found on the different models may be had, in which case the door will carry the Type Number indicated in the schedule listed on page 3.

Special Features of Rol-Top

1. Synchronized counterbalance—giving greater ease of operation.
2. Adjustable steel sectional cross-ties—effecting strength, rigidity and durability.
3. Heavily designed hardware—applied with through carriage bolts.
4. Seal-tight device—insuring maximum weather-tightness.
5. Rollers and sheaves ball-bearing—enhancing operating ease and lasting qualities.
6. Sections of select wood—mortised and tenoned, steel doweled and waterproof glued.
7. Yale lock and other parts of best quality, sturdily designed.
8. Manufactured by exclusive door engineers of 36 years experience.



Rol-Tops of Large Size for Commercial Buildings Built for Hard and Regular Service



One of the Numerous Variations in Panel Designs for Which Rol-Top Is Suited



Extremely Large Openings Can Be Closed by Two or More Doors Used with Sliding Center Mullions as Used in This Building

Standard Model

Stiles and rails 1⅜ in. or 1¾ in. thick on doors not exceeding 8 ft. in width or height and 1¾ in. on larger doors. Doors exceeding 12 ft. in width are reinforced with steel truss members. Counterbalance accomplished by two or more precision tested helical stretch springs, paralleling the horizontal tracks and connected to bottom of door with steel cable running through ball bearing sheaves. Hardware is of heavy design applied with through bolts. Lock is of spring release bolt type conveniently located. For a more economical door write for details on the "Economy" model.

De Luxe Model

Sections on all sizes reinforced with Kinnear's special type steel truss members.

Truss members strengthen the wood and minimize the natural tendencies of wood to warp and deflect, increasing life of service. Counterbalance on doors between 7 ft. 6 in. and 8 ft. 0 in. in width and not exceeding 8 ft. 0 in. high, by single helical stretch spring encased between tracks at either lintel or back end of horizontal tracks. Larger sizes, by Kinnear type shaft and torsion spring placed at back end of horizontal track on doors under 160 sq. ft. in area and above lintel on larger doors, in which case a chain hoist is recommended. Hardware is of heavy design applied with through bolts. Lock of spring release type with Yale cylinder lock.

For further details see Specifications and Dimension Sheet on following pages.



De Luxe Model
Showing a stock 8x7-ft. door of type buyers generally prefer. Single counterbalance spring encased out of danger at back end of tracks. Reinforced with adjustable steel cross-ties. A door of evident durability



Standard Model
A substantial 8x8-ft. door offering conveniences of the overhead type door but approximating the price of the older inconvenient type. Two mated exposed counterbalance springs. No truss members. Embodies features that make it an unexcelled value

Auxiliary Equipment

Through various auxiliary equipment, the application of Rol-Top is very elastic. When needing equipment not listed below write Kinnear for special data.

Chain Hoist—For operation of large doors by means of endless chain and reduction gearing. Compact unit designed to exactly suit Rol-Top.

Wicket Door—A small pass or entrance door. May be built within any large Rol-Top. A very handy arrangement.

Movable Post—Sliding or swinging center mullion to permit the use of two or more doors in a single large opening.

Automatic Opener—For raising a door automatically by the pull of a cord. Especially suited for fire stations.

Lubritorium Design—Special counterbalance and track arrangement for carrying door sufficiently high to permit use of hydraulic lifts.

Installation

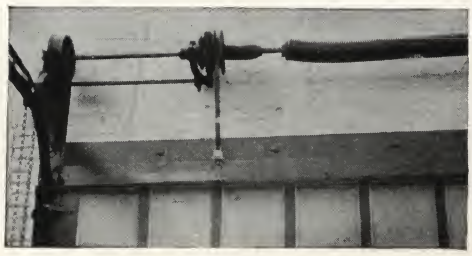
A competent carpenter, with erection instructions supplied at time of shipment, can easily install Rol-Top in old or new buildings. Unless door is applied to steel it is recommended that the opening be framed with 2x6-in. timbers, to provide secure foundation for vertical tracks. Hangers for horizontal tracks may be of wood or steel.

Data When Ordering

To insure against error it is recommended that a sketch of the opening condition be furnished at time of ordering, noting width of opening from jamb to jamb, height of opening from floor to lintel, type of wall (if recommended 2x6-in. timber framing is not used), headroom and side clearance available, and desired clearance under horizontal tracks. Also note number and location of sash sections desired (if one is sufficient it will be third from bottom unless otherwise specified), whether door is to be primed and if locks on two or more doors are to be keyed alike. Give current characteristics if door is to be motor operated.



Type TR4
Left:
Single torsion spring counterbalanced, steel trussed, 1¾ in. thick manually operated Rol-Top, equipped with wicket or pass door. Note spring at back end of horizontal door tracks



Chain Hoist
Right:
Showing chain hoist mechanism and torsion spring counterbalance placed above lintel on chain hoist doors. The unique device on the left of spring shaft is Kinnear's special pull-down for starting door in motion

Weathertight Sealing Device

The Rol-Top Door is made weather-tight through an ingenious device for making it fit tight to the jamb. It consists of a graduated rabbet on both side edges of the door, which is wide at the bottom, decreasing in depth as it nears the lintel. A strip of wood fastened to the 2x6-in. on inside face of wall is placed in a slanting position to fit snugly in the rabbet when door is closed.

This graduation gives the door free action because as the door is raised the space between the rabbet and the strip steadily increases.

Specificational Data Rol-Top Door



Key to Type Schedule

"S"—Stretch spring exposed along horizontal tracks.

"C"—Single concealed stretch spring counterbalance at lintel.

"CU"—Single concealed stretch spring at back of horizontal tracks.

Note: Symbol "C" and "CU" apply only to doors from 7 ft. 6 ins. to 8 ft. wide and not higher than 8 ft. Other size doors having single spring take torsion type spring.

"T"—Single torsion spring (at back end of horizontal tracks except on chain operated doors).

"L"—Special location of tracks to give clearance for hydraulic lifts.

"R"—Steel reinforcing truss members on door sections (on all doors over 12 ft. in width).

"8"—1⅜-in. thick stiles and rails.

"4"—1¾-in. thick stiles and rails.

Standard Material—Stiles and rails of Sitka Spruce either 1¾ or 1⅜ in. as follows: 1¾-in. reinforced* or not reinforced up to 12 ft. 0 in., (over 12 ft. 0 in. reinforced)—1⅜ in. up to 8 ft. 0 in. reinforced* or not reinforced, (8 ft. 0 in. to 12 ft. 0 in. reinforced) 1⅜ in. not furnished on doors over 12 ft. 0 in. in width. Panels ⅜-in. three-ply fir veneer. Doors of other wood or thickness furnished on special order.

*Kinnear Adjusted Steel Reinforcing members.

Sections steel reinforced, when specified on doors up to 12 ft. wide (steel trusses standard on doors over 12 ft.). Roller and sheaves ball bearing. Spring of oil tempered spring steel. Lifting cable, Tru-Lay preformed cable. All hardware and brackets of heavy design.

Sectional Construction—Sections are approximately 2 ft. high and panels approximately 12 in. wide, except on special orders. Sections shiplapped and have graduate end rabbet to fit Rol-Top special wedge type weatherproof sealing device. Any number of sash sections furnished without charge. If wire glass is to be used, should be of special thickness to limit weight.

Operation—Manual unless otherwise specified except doors exceeding 160 sq. ft. in area, which should be operated by chain or motor. For the large sizes write for detailed recommendations.

Shipping Data—Crated for shipment in sections with hardware applied and with all other materials except glass. Also complete erection instructions.

In Specifying

For convenience and ease, specify Rol-Top Doors by type symbols. It will insure that all bidders will meet your predetermined standards. The following are type symbols covering construction usually preferred and strongly recommended by Kinnear.

"CU8R"—1⅜-inch thick reinforced with Kinnear adjustable steel cross-ties—single stretch spring in hood placed under back end of horizontal tracks—limited to doors 7 ft. 6 in. to 8 ft. in width and not exceeding 8 ft. in height.

"T8R"—1⅜-in. thick reinforced with Kinnear adjustable steel cross-ties—torsion spring on shaft placed between back end of horizontal tracks—finished in any size up to 12 ft. in width.

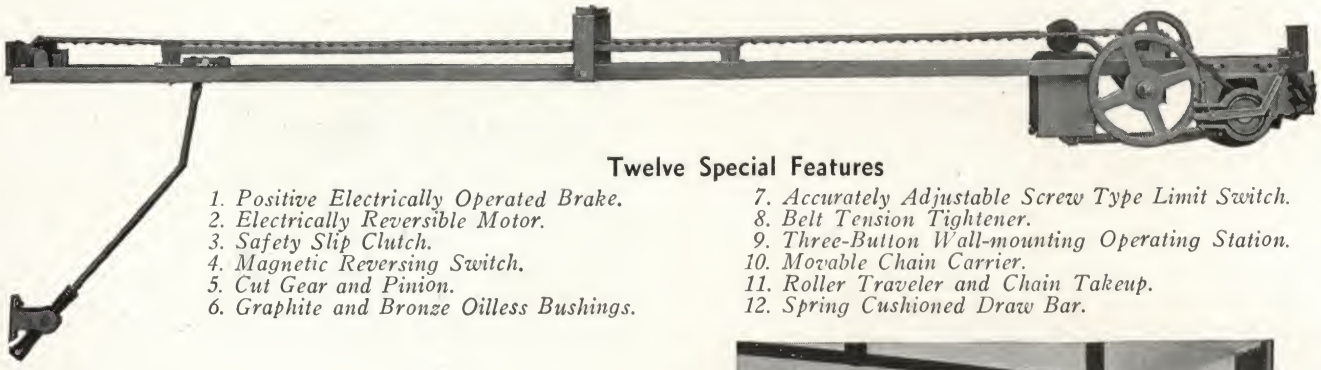
"T4R"—Same as "T8R" except 1¾ in. thick—furnished in sizes exceeding 12 ft. in width (should be specified for chain hoist in sizes exceeding 160 sq. ft. in area or 16 ft. 2 in. in width or height).

"L4R"—Hy-lift or lubritorium door—1¾ in. thick reinforced with Kinnear Adjustable steel cross-ties—torsion spring on shaft placed above lintel—furnished in any size.

When desiring a cheaper door in sizes under 12 ft. in width, specify Type "S," which is counterbalanced by stretch springs placed parallel to horizontal tracks and known as the standard model. In specifying Type "S" also indicate desired thickness.

Note: Thickness and application of cross-ties on the above types can be varied in accordance with information given in accompanying specifications.

Rol-Top Motor Operator



Twelve Special Features

1. *Positive Electrically Operated Brake.*
2. *Electrically Reversible Motor.*
3. *Safety Slip Clutch.*
4. *Magnetic Reversing Switch.*
5. *Cut Gear and Pinion.*
6. *Graphite and Bronze Oilless Bushings.*
7. *Accurately Adjustable Screw Type Limit Switch.*
8. *Belt Tension Tightener.*
9. *Three-Button Wall-mounting Operating Station.*
10. *Movable Chain Carrier.*
11. *Roller Traveler and Chain Takeup.*
12. *Spring Cushioned Draw Bar.*

Description

Rol-Top Motor Operator is in keeping with Kinnear high standard of construction. Designed especially for overhead type doors. Model MS, illustrated, suited for any size door and equipped with proper size motor. Can be wired with a varied combination of conveniently located operating stations. For those desiring a less expensive unit, Model SS (like MS but without magnetic switch, electric brake and with friction-clutch) can be furnished for stock doors. Motor on both models of standard make and ranging from ¼ hp. up, depending on size or door to be operated.

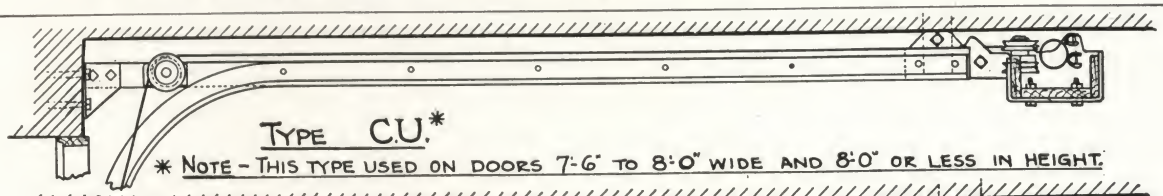
Write for special pamphlet giving more complete details. Where conditions do not permit use of the Rol-Top operator, one of Kinnear's other type power units may be applicable, in which case recommendations will be made.



Showing Neatness and Compactness of the Rol-Top Electric Door Operator When Installed in a Private Residence Garage

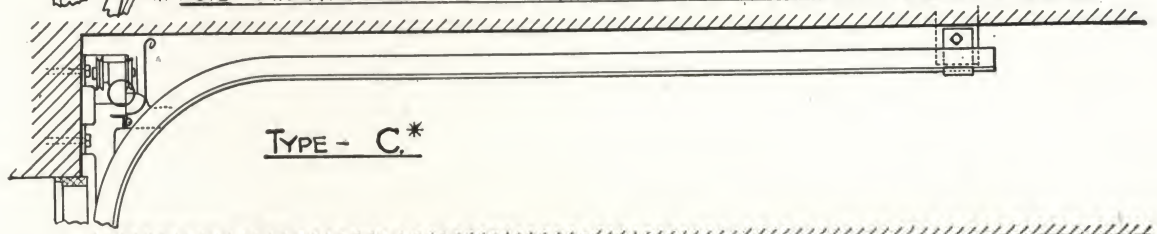
All operating mechanism up and out of reach of meddlers. Requires very little more headroom or space than that already provided for the door mechanism, i.e., 6½ in.

DETAILS OF COUNTERBALANCE AND CLEARANCES REQUIRED FOR ROL-TOP DOORS

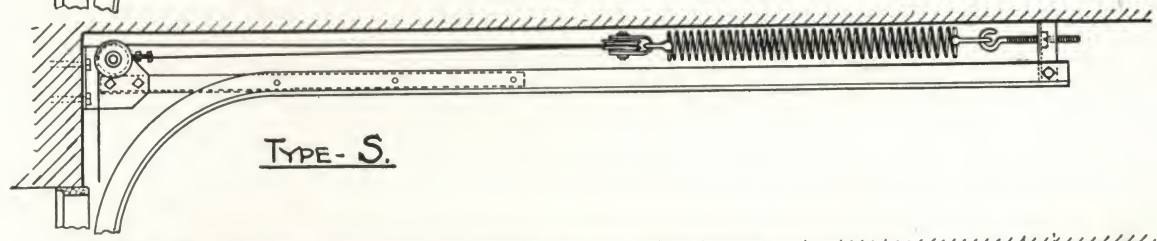


TYPE C.U.*

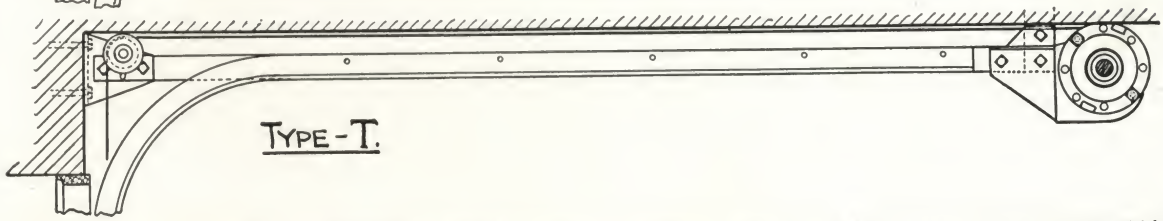
* NOTE - THIS TYPE USED ON DOORS 7'-6" TO 8'-0" WIDE AND 8'-0" OR LESS IN HEIGHT.



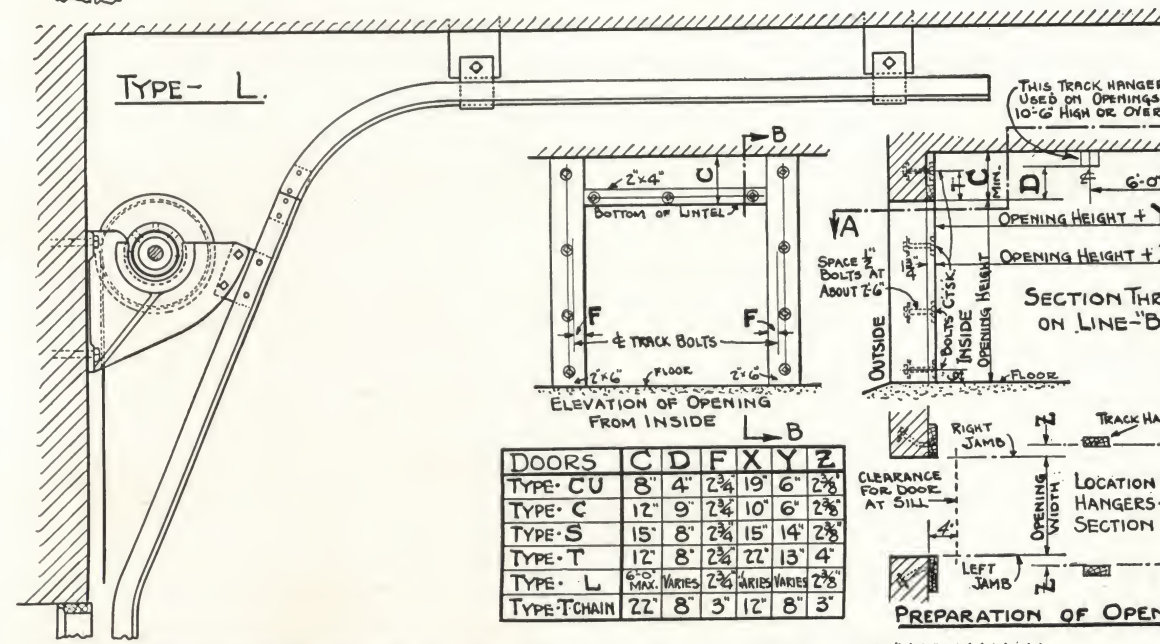
TYPE - C.*



TYPE - S.

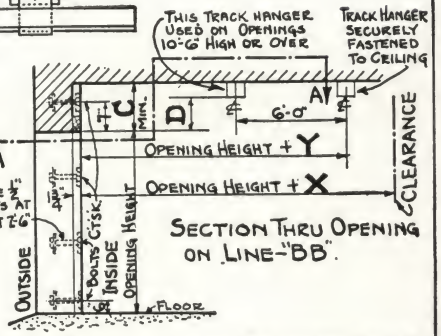


TYPE - T.



TYPE - L.

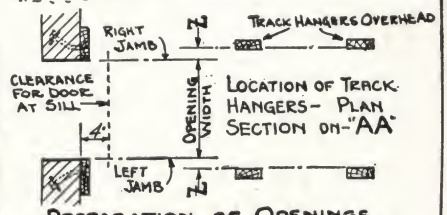
ELEVATION OF OPENING FROM INSIDE



SECTION THRU OPENING ON LINE-"BB".

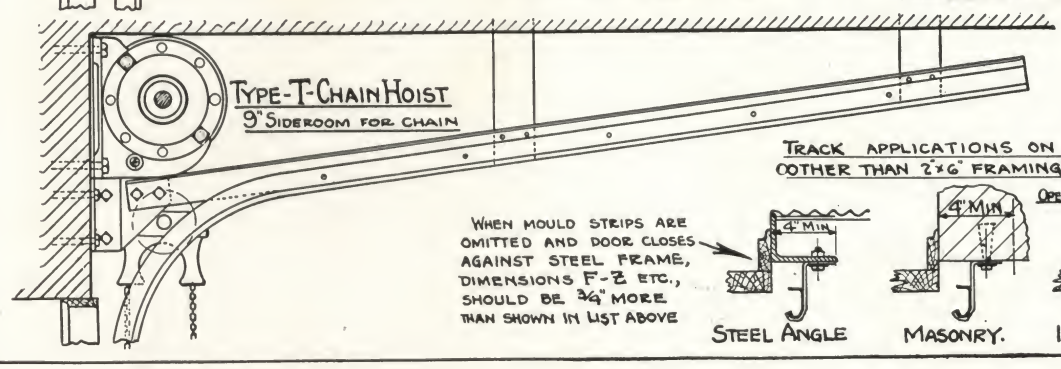
L B

DOORS	C	D	F	X	Y	Z
TYPE · CU	8"	4"	2¾"	19"	6"	2⅞"
TYPE · C	12"	9"	2¾"	10"	6"	2⅞"
TYPE · S	15"	8"	2¾"	15"	14"	2⅞"
TYPE · T	12"	8"	2¾"	22"	13"	4"
TYPE · L	6'-0" MAX.	VARIES	2¾"	VARIES	VARIES	2⅞"
TYPE · T CHAIN	22"	8"	3"	12"	8"	3"



LOCATION OF TRACK HANGERS - PLAN SECTION ON-"AA"

PREPARATION OF OPENINGS

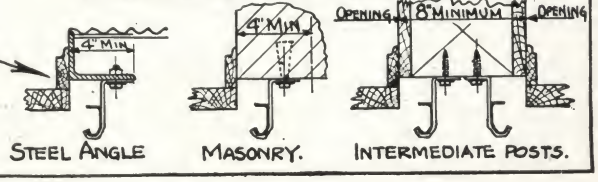


TYPE-T-CHAIN HOIST

9" SIDEROOM FOR CHAIN

TRACK APPLICATIONS ON TYPICAL JAMBS OTHER THAN 2"x6" FRAMING SHOWN ABOVE.

WHEN MOULD STRIPS ARE OMITTED AND DOOR CLOSES AGAINST STEEL FRAME, DIMENSIONS F-Z ETC., SHOULD BE ¾" MORE THAN SHOWN IN LIST ABOVE



STEEL ANGLE MASONRY. INTERMEDIATE POSTS.

OVERHEAD DOOR CORPORATION

MAIN OFFICE AND FACTORY

HARTFORD CITY, IND., U. S. A.

DISTRIBUTERS EVERYWHERE

CANADA: Overhead Door Company of Canada, Ltd., 1951 Dundas Street, West, TORONTO, ONT.

LOCAL REPRESENTATIVE

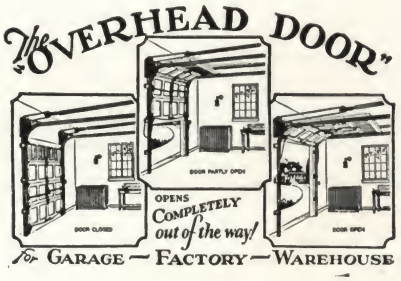
Product

The "Overhead Door" (Reg. U. S. Pat. Off.).

Overhead Door Corporation has manufactured The "Overhead Door" continuously and solely for a period of eleven years. The factory at Hartford City, Indiana, covers 136,000 sq. ft.

Sales-service and Distribution

Our sales-service organization is international in scope. Individual Overhead Door Companies are located in every state and practically every important city in each state in the United States. Each of these companies maintains an active sales, service and installation force which is readily accessible to the architect as well as to his clients.



The "Overhead Door"

Application—For public, private and apartment house garages, factories, warehouses, greasing and filling stations, airplane hangars, fire stations, boat wells, partitions, etc.

Operation—Opens UP—completely out of the way. Affords full height and width of opening. Makes available the use of every inch of floor and wall space within the building. Operation is smooth, quick and silent.

Any Size or Design—The "Overhead Door" may be had in any size or design to conform with any architectural trend. The door may be electrically operated if desired.

Stock Materials—Stiles and rails are made of the finest grade Sitka spruce, free from all knots and blemishes. Panels are made of three-ply fir veneer, manufactured with waterproof and termite-proof glue. All materials are thoroughly sanded and ready for paint or varnish. Doors can also be made of clear cypress, white pine, chestnut or selected red oak throughout. Solid raised panels, at extra cost. All rails and stiles are 1¾" thick and three-ply veneer is ⅜" thick. White pine available 2¼" thick. All material is thoroughly kiln-dried.

All tracks and hardware for all size doors are made of steel formed in our factory. Hardware may be finished with DuPont (Baking) Dulux. All moving parts are ball bearing. Safe working load of chain is many times the weight of the door. Springs are tested at more stretch than is required to operate the door.

Door Sections—Stiles and rails are mortised and tenoned together and are glued and doweled with steel dowels. Sections are joined together by means of special graduated hinges and the joints between the sections are rabbeted to make a shiplap joint. The rabbet is $\frac{5}{16}$" deep on each rail and is sufficient to exclude all wind and rain.

Number of Sections Required—

Doors up to 8′ 6″	4 sections
Doors from 8′ 6 ″ to 10′ 6″	5 sections
Doors from 10′ 6″ to 12′ 6″	6 sections
Doors from 12′ 6″ to 14′ 6″	7 sections

Higher doors should be figured with intermediate sections not to exceed 23″ in height. We reserve the right to specify changes when better door operation will result.

Glass Sections—Any or all sections for all size doors may be arranged for glass. If mullions are required they are furnished 1¾" wide at slight extra cost. No glass is furnished unless specified.

Stock Doors—Stock size doors are 8′ wide by 8′ high; 8′ wide by 7′6″ high; 8′ wide by 7′ high.

Stock doors are made with 4″ wide center stiles, 5⅜″ end stiles, $2\frac{5}{16}$″ center rails, 4″ top rails, 5″ bottom rails. Each section is made with 5 center stiles and 6 three-ply fir panels ⅜″ thick, or all may be left open for glass.

Special Size Doors—Doors made to size, in general, are constructed as follows: Doors up to 10′ 2″ wide are made with 3½", 4″ or 5″ center stiles, $2\frac{5}{16}$″ center rails, 5⅜″ end stiles, 5″ top rails and 6″ bottom rails. The bottom rails can be furnished extra wide if desired at slight extra cost.

Doors from 10′ 3″ to 16′ wide are made with 5″ wide center stiles, $2\frac{13}{16}$″ center rails, 6″ end stiles, 6″ top rails and 7″ bottom rails. Doors over 16′ wide are made with 6½" wide end stiles. The bottom rails can be furnished extra wide if desired at slight extra cost.

Center stiles are arranged so that no glass or wood panel is over 16″ or less than 10″ in width.

Special Design Doors—Doors of special design may be built to conform to any architectural conception. The beauty and artistic features of a building may be incorporated in the garage doors. Our engineering department will gladly co-operate with architects in making their plans so that they may utilize to the utmost the unique advantages of The "Overhead Door."

Door Struts—Doors 12′ wide or over are equipped with our steel struts to make the door rigid. Doors of special construction less than 12′ wide may require struts.

Locking Device—A Yale cylinder lock in combination with a positive locking device, securely locks, bolts and bars the door across its entire width with a quarter turn of the handle from either the inside or outside. The door may be locked or unlocked from either side. Doors may be keyed alike or separately. Master-keying at slight extra cost.

Jamb and Pier Construction—2″x6″ facing secured to the wall with bolts and made flush with the sides of the opening provides an ideal foundation for the hanging of any size "Overhead Door." These facings should extend at least 15″ above the header and be fastened securely near the top.

Angle mounted track may be installed directly on steel jambs by drilling and tapping the jambs or directly to brick or concrete if necessary.

Headroom—The term indicates the clear space (full door and track width) vertically above the top of the opening to the nearest point of obstruction, such as rafters, ceiling, beams or roof.

Manufactured Complete—Each "Overhead Door" is manufactured complete and is assembled in units with hardware attached ready for installation. This includes all bolts, screws, etc. No glass is furnished unless specified.

Electric Control—The "Overhead Door" Control is designed and engineered for use on only The "Overhead Door." Positive, quick and silent electric operation is assured. Control stations may be located at any desired point. Private garage doors may be operated from the driveway, house or any convenient location.

Metal Doors—The "Overhead Door" may be had in all-steel, metal clad, or all-steel with rock wool insulation construction. Flat casement sash appearance construction is also offered.

Airplane Hangar Doors—The "Overhead Door," hangar type, developed after two years of exhaustive research and experiment, we believe to be the most modern and satisfactory hangar door equipment. Its departure from the conventional hangar door construction is a distinct achievement. Any "Overhead Door" distributer will be glad to explain this new equipment in detail.

No. "35" Door—Is an addition to the regular "Overhead Door" line. Made to satisfy the demand for "Overhead Door" equipment at low cost. It is sturdy, quiet in operation, and attractive in design.

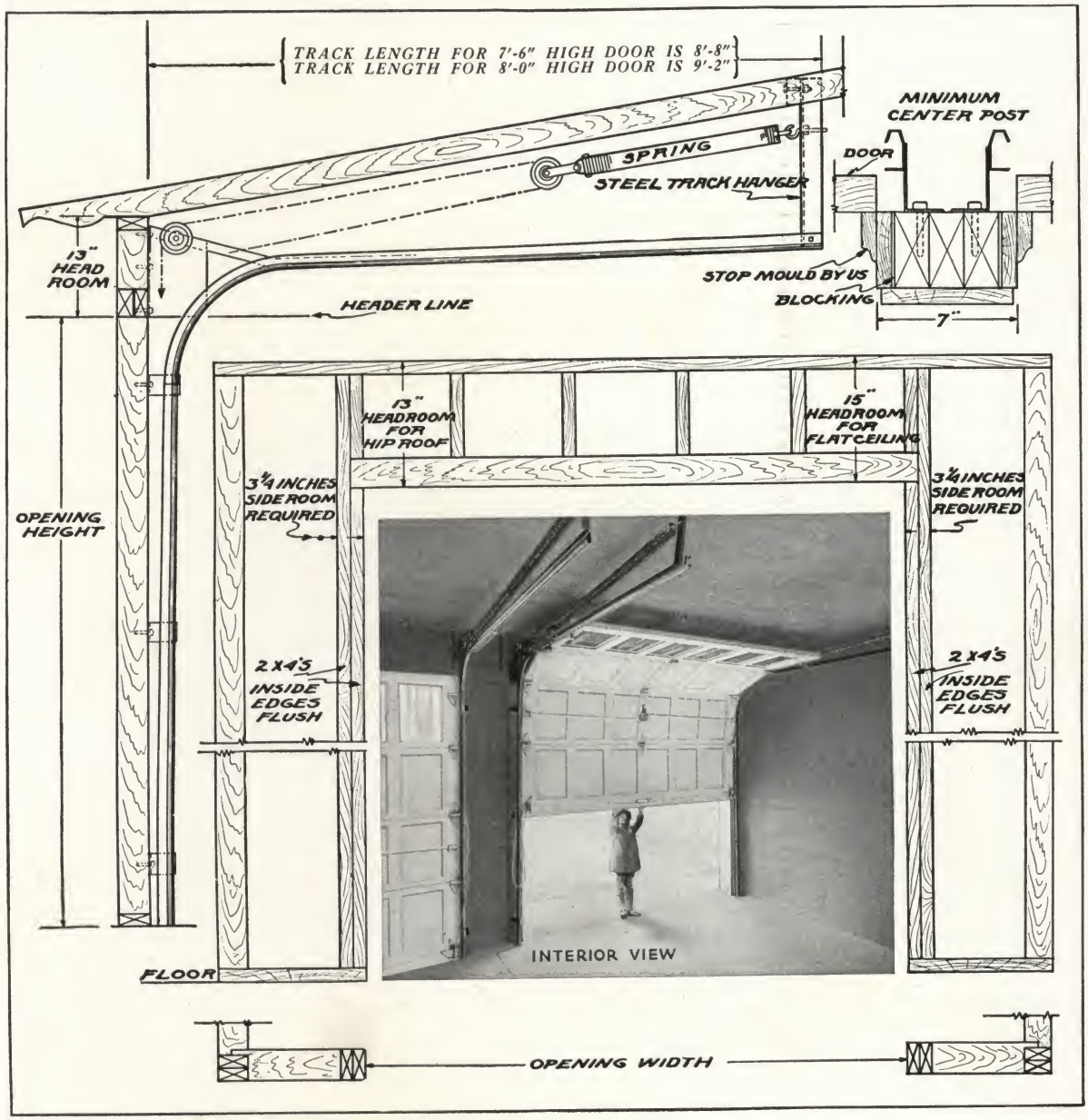
Accessories

Attention is called to a few of the many devices offered for use in connection with The "Overhead Door," namely: Girder and auxiliary track; chain hoist, hand or electrically operated; automatic fire station equipment; full vertical doors; doors with more than normal vertical travel where auto lifts are used; and accessories, such as, rubber rollers, built-in pass doors, doors following roof line, etc.

Specifications

In specifying, designate as "The 'Overhead Door,' manufactured by Overhead Door Corporation, Hartford City, Indiana, U. S. A."

Should existing clearances be less than those indicated in the detail below consult our Engineering Department for information relative to special installation means



Practical jamb construction for all "OVERHEAD DOORS" not exceeding 8 ft. wide or 8 ft. high.

Stock size doors are 8 ft. wide by 8 ft. high; 8 ft. wide by 7 ft. 6 in. high; 8 ft. wide by 7 ft. high.

Tracks for all "OVERHEAD DOORS" to be installed on steel jambs are mounted on angle iron because a drill and tap method of installation is necessary.

Doors 64 sq. ft. and less in area, to be installed on steel jambs have the vertical tracks mounted on 2½x2½x⅛-in. angle. Horizontal tracks do not require reinforcement.

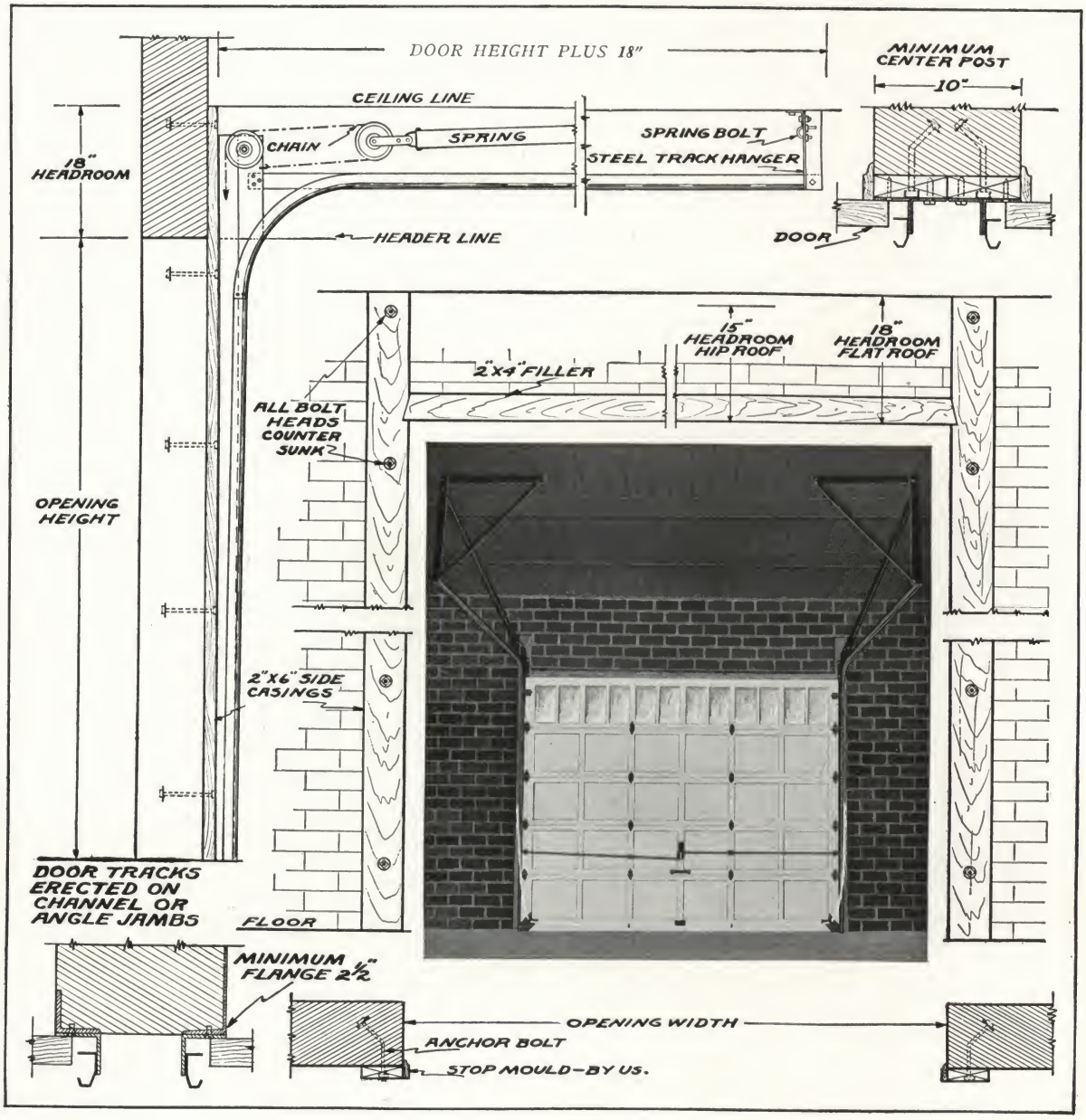
Should an inside wood (casing) jamb construction be desired as shown in Jamb Detail No. 3, either 2x4-in. or 2x6-in. casing may be used. In either case clearances specified in Jamb Detail No. 1 prevail

The "OVERHEAD DOOR" Control (motor size always in the proper relation to door size) assures perfect and positive electric operation for The "OVERHEAD DOOR"

DETAIL NO. 1

WOOD JAMB DETAIL FOR THE "OVERHEAD DOOR"

Should existing clearances be less than those indicated in the detail below consult our Engineering Department for information relative to special installation means



Practical jamb construction for "OVERHEAD DOORS" measuring in area up to (approximately) 144 sq. ft. and which are to be installed on wood (casing) jambs.

Vertical and horizontal tracks for doors 90 to 144 sq. ft. (approximately) in area are mounted on 2½x2½x⅛-in. angle iron.

Doors 65 to 90 sq. ft. in area have the vertical tracks assembled with double jamb brackets and the horizontal tracks mounted on 1¼x1¼x⅛-in. angle iron.

If a door measuring less than 65 sq. ft. in area is desired for installation on inside wood (casing) or steel jambs, clearances as specified in Jamb Detail No. 1 may be followed, and 2x4-in. inside wood (casing) jambs may be used if desired.

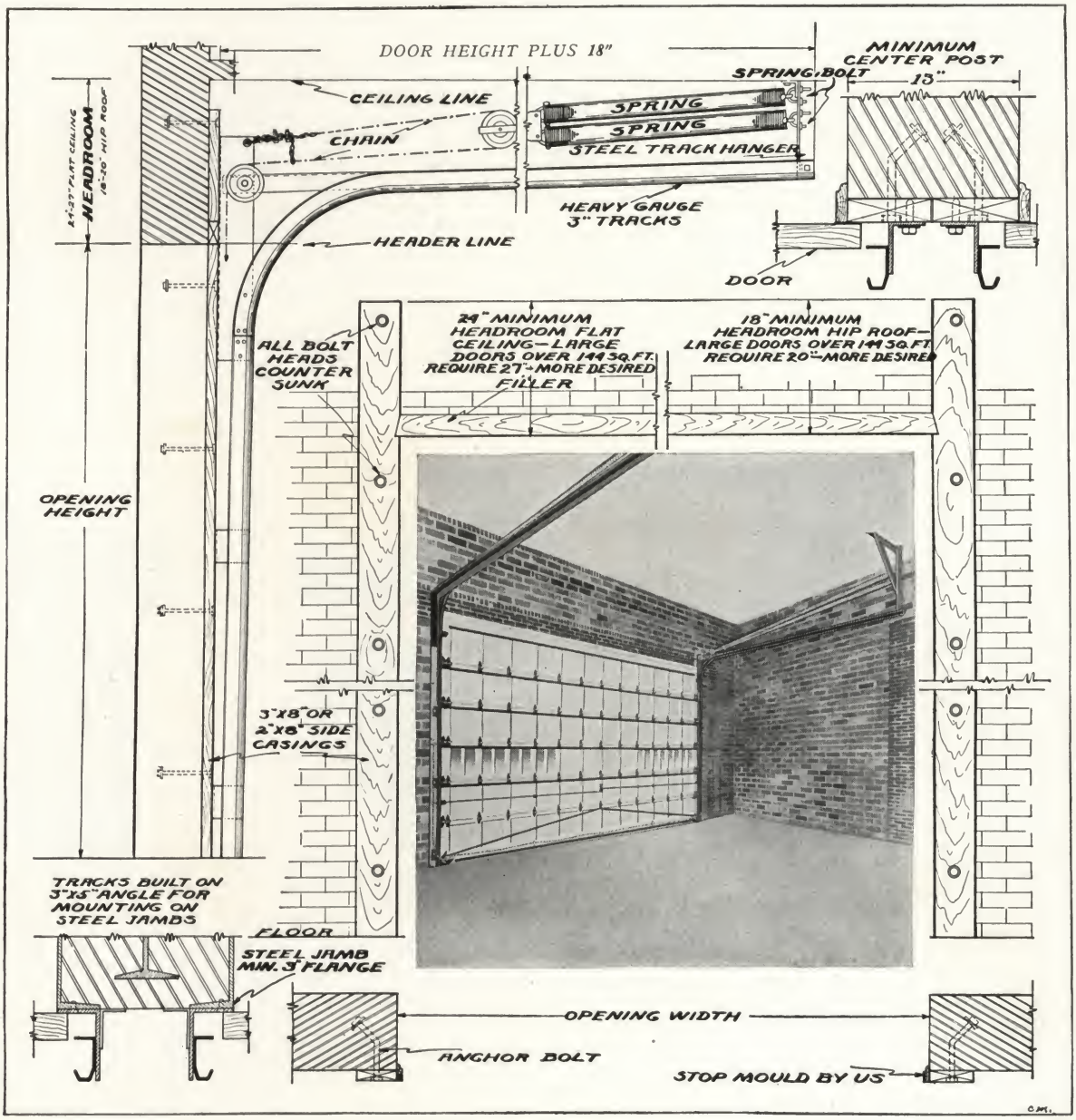
Tracks for all "OVERHEAD DOORS" to be installed on steel jambs are mounted on angle iron because a drill and tap method of installation is necessary.

Vertical and horizontal tracks for doors 64 to 144 sq. ft. (approximately) in area to be installed on steel jambs are mounted on 2½x2½x⅛-in. angle iron. Doors 65 to 90 sq. ft. in area have the vertical tracks mounted on 2½x2½x⅛-in. angle iron and the horizontal tracks mounted on either 1¼x1¼x⅛-in. angle iron or on 2½x2½x⅛-in. angle iron.

The "OVERHEAD DOOR" Control (motor size always in the proper relation to door size) assures perfect and positive electric operation for The "OVERHEAD DOOR"

DETAIL NO. 3 **INSIDE WOOD (Casing) JAMB DETAIL FOR THE "OVERHEAD DOOR"**

Should existing clearances be less than those indicated in the detail below consult our Engineering Department for information relative to special installation means



Jamb detail requirements for the installation of "OVERHEAD DOORS" measuring (approximately) 144 sq. ft. or more, in area.

Special heavy gauge track and hardware are standard equipment for use on doors of this classification, which are to be installed on either wood or steel jambs.

Doors 144 sq. ft. (approximately) and over in area, to be erected on wood (casing) jambs, have vertical tracks equipped with heavy gauge jamb brackets and have the horizontal tracks mounted on 2½x2½-in. angle iron. Doors exceedingly wide or high (approximately 165 sq. ft. and greater) have vertical tracks mounted on 3x5-in. angle iron.

For installation on steel jambs, vertical tracks of all doors 144 sq. ft. (approximately) in area and greater, are mounted on 3x5-in. angle iron and horizontal tracks are mounted on 2½x 2½-in. angle iron

The "OVERHEAD DOOR" Control (motor size always in the proper relation to door size) assures perfect and positive electric operation for The "OVERHEAD DOOR"

DETAIL NO. 4

HEAVY HARDWARE JAMB DETAIL FOR THE "OVERHEAD DOOR"

RICHARDS-WILCOX MANUFACTURING CO.

INCORPORATED

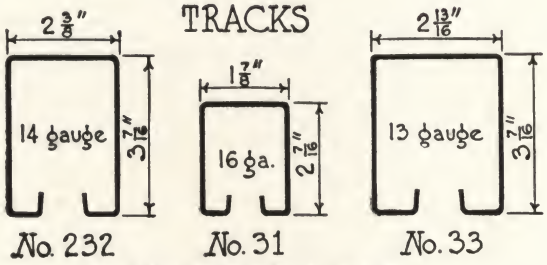
Manufacturers of Door Hangers and Hardware Specialties

AURORA, ILL.

BRANCHES IN ALL PRINCIPAL CITIES

For Other R-W Products, see Manufacturers' Index

For more than 50 years the slogan of the R-W company has been "A Hanger for Any Door That Slides." Some of the hanger and track equipment is listed on this page, but heavier or lighter equipment is available to handle any sliding or folding door installation. If equipment not listed on this page is desired, get in touch with our Engineering Department at Aurora, Ill., or any of our branch offices, for detailed information.



STRAIGHT AND PARALLEL SLIDING DOOR EQUIPMENT

Hanger No.	Track No.	For doors weighing, lb.	Thickness of doors, in.	Top of door to bottom of track, in.	
				Minimum	Maximum
20½B	31	300	1¾–2½	1 3/16	2 5/16
27½B-1	31	300	1¾–2	1 3/16	2 5/16
27½B-2	31	300	2¼–2¾	1 3/16	2 5/16
28½B-1	32	400	1¾–2	1 3/16	2 5/16
28½B-2	32	400	2¼–2¾	1 3/16	2 5/16
29½B-1	232	600	1¾–2	1⅛	2½
29½B-2	232	600	2¼–2¾	1⅛	2½
123½B-1	33	800	1¾–2	1¼	2⅜
123½B-2	33	800	2¼–3	1¼	2⅜
150½B-1	33	800	1¾–2	1¼	2⅜
150½B-2	33	800	2¼–3½	1¼	2⅜
499-1	233	1200	1¾ to 2	1¼	2⅜
499-2	233	1200	1¼ to 3½	1¼	2⅜
155½B	375	1500	2¼ to 3½	5½	6¾
149-1	145	2000	1¾ to 2	1¾	3¼
149-2	145	2000	2½ to 3¼	1¾	3¼
149-3	145	2000	3½ to 4¼	1¾	3¼
598-1	533	2000	1¾ to 2¼	1¾	3¼
598-2	533	2000	2½ to 3¼	1¾	3¼
598-3	533	2000	3½ to 4¼	1¾	3¼
1098-1	533	3000	1¾ to 2¼	5½	6½
1098-2	533	3000	2½ to 3¼	5½	6½
1098-3	533	3000	3½ to 4½	5½	6½
1049-1	145	3000	1¾ to 2¼	5½	6½
1049-2	145	3000	2½ to 3¼	5½	6½
1049-3	145	3000	3½ to 4¼	5½	6½

R-W LOCK JOINT TROLLEY TRACKS

Track No.	Gauge	Outside measurements		Standard lengths, ft.
		Width, in.	Height, in.	
31	16	1⅞	2 7/16	Up to 12
32	14	2 1/32	2 31/32	Up to 12
232	14	2⅜	3 7/16	Up to 10
33	13	2 13/16	3 7/16	Up to 12
233	10	2 29/32	4 17/32	Up to 12
375	10	2 29/32	3 17/32	Up to 12
*145	11	3¼	4⅝	Up to 12
533	9	3¼	4⅝	Up to 12

*This track has an angle iron tread.



R-W No. 20½B Ball Bearing Hanger



R-W No. 150½B Ball Bearing Hanger

To specify. Furnish and install Richards-Wilcox Ball Bearing Hanger No. .... (see table) and Track No. ...., opening .... ft. wide, ... ft. high, doors .... ins. thick.

Note: State whether overhead or wall attachment.

R-W NO. 235 "SLIDASIDE" GARAGE DOOR EQUIPMENT

R-W "Slidaside" is made for several types of right-angle door installations. Set AA, single door and BB, double doors where there is 2 ins. or more space between jamb and side wall. Set CC, single doors, DD, double doors where there is less than 2 ins. space between jamb and side wall. Set EE, single doors, FF double doors, where there is 26 ins. or more space between jamb and side wall, curved corner track used. Set GG, 2 doors hinged together and set HH, 2 pairs of doors hinged together where there is 26 ins. or more space between jamb and side wall, curved corner track used.

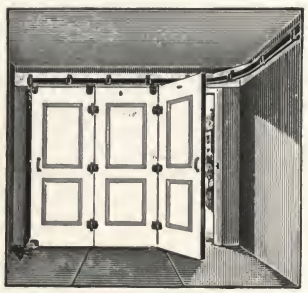
R-W NO. 235 "SLIDASIDE" GARAGE DOOR SETS

Cat. No.	†Width of opening from, ft.	*Max. weight of each door, lb.	‡Min. headroom, in.	Space jamb to side wall, in.
235-AA	8-10	200	9	2 or more
235-BB	8-10	200	9	2 or more
235-CC	8-10	200	6⅜	Less than 2
235-DD	8-10	200	6⅜	Less than 2
235-EE	8-10	200	6⅜	26 or more
235-FF	8-10	200	6⅜	26 or more
235-GG	8-10	200	6⅜	26 or more
235-HH	8-16	200	6⅜	26 or more
235-JJ	8-10	200	6⅜	No limit
235-KK	12-20	200	6⅜	No limit

*For doors weighing 200-350 lbs. each specify 232 track.
*For doors weighing 350-600 lbs. each specify 33 track.
†Be sure to specify actual width of opening.
‡For minimum headroom for heavy doors, see Catalog A-55.

The JJ set is for 3 doors hinged together sliding around the corner on curved track, and the KK is for 2 groups of 3 doors hinged together, one group sliding around one corner, the other group sliding around the opposite corner. No limit to distance between jamb and side wall, curved corner track is used.

Specify whether doors are to be locked from inside and from outside, or if to be locked from inside only.



No. 235-JJ Set, Three Doors Hinged Together Sliding Around the Corner on Curved Track

For opening with 6 doors, 3 doors slide around each corner on curved track, specify 235-KK

R-W "SLIDETITE" GARAGE DOOR EQUIPMENT

No. 1035 Equipment—Operation

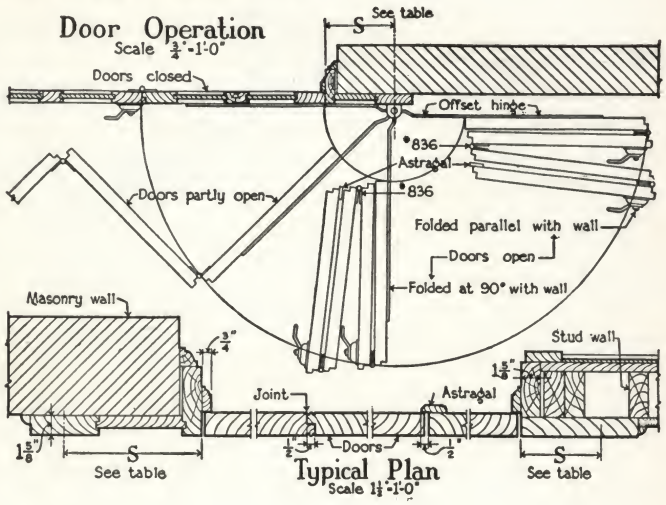
"Slidetite" equipment consists of complete sets of hardware for the operation of from 3 to 10 doors closing in line in one opening. The doors are so hinged together and suspended at intervals on hangers running in overhead tracks that the doors open or close with a sliding-folding, accordion movement and at all times occupy the minimum space.

When open, the doors are carried to one or both sides of the opening compactly folded together and swung clear of the jamb line opening, standing either at an angle to the front wall or, where space is sufficient, folded parallel with the front wall.

Although in-folding is recommended, "Slidetite" equipment is equally adapted to doors opening out.

Hardware Furnished

Each "Slidetite" set consists of the requisite quantity of track, hangers, hinges, floor guides, tie rods, handles and door locking devices (together with all bolts and screws for attachment) necessary to operate the number of doors for which the set is intended. Complete erection details are furnished with each set of equipment.



NO. 1035 "SLIDETITE" STANDARD EQUIPMENT SETS

Number of doors	Maximum weight of each door using Track No.			"S" minimum, in.	
	31 100 lb.	232 175 lb.	33 250 lb.	Doors opening at 90° Thickness of: +in.	Opening parallel with wall, in.
3	1035-B3-31	1035-B3-232	1035-B3-33	2 doors +2⅛	1½
4	1035-B4-31	1035-B4-232	1035-B4-33	3 doors +2¾	1½
4	1035-B4½-31	1035-B4½-232	1035-B4½-33	2 doors +2⅛	1½
5	1035-B5-31	1035-B5-232	1035-B5-33	3 doors +2¾	1½
6	1035-B6-31	1035-B6-232	1035-B6-33	3 doors +2¾	1½
7	1035-B7-31	1035-B7-232	1035-B7-33	4 doors +3¼	1½
8	1035-B8-31	1035-B8-232	1035-B8-33	5 doors +6¼	1½
8	1035-B8½-31	1035-B8½-232	1035-B8½-33	4 doors +3¼	1½
9	1035-B9-31	1035-B9-232	1035-B9-33	5 doors +6¼	1½
10	1035-B10-31	1035-B10-232	1035-B10-33	5 doors +6¼	1½

Minimum headroom where two doors fold in one direction: No. 31 track = 6 ins., No. 232 track = 8¼ ins.; No. 33 track = 8½ ins. When three doors fold in one direction: No. 31 track = 8¼ ins.; No. 232 track = 11¼ ins.; No. 33 track = 11½ ins. When more than 3 doors fold one way, the figure for No. 31 track is increased to 9 ins.

Note: All dimensions for out-opening sets are the same as above except the dimension "S" where the plus figures for sets O1035-B3 and B4½ is 4½ ins.; for sets O1035-B4, B5 and B6 is 5¼ ins.; for sets O1035-B7 and B8½ is 8¼ ins.; for sets O1035-B8, B9 and B10 is 9 ins.

How to Use the Table

(A) System of Numbering—The numbers in the 2nd, 3rd and 4th hand columns designate the complete "open in" hardware set adapted to the number and weight of doors to be operated, and the plan type (the number of doors opening from the split to the right and left hand). In the table the numeral 1035 indicates the set type; the numeral B3 etc. indicates, B—No. 517 standard cremone bolts and 3 etc.—the plan type; the numerals 31, 232 and 33 indicate the track used for various door weights.

(B) Open-out Sets—To designate sets for out-opening doors, prefix the letter "O" to the first numeral, thus O1035.

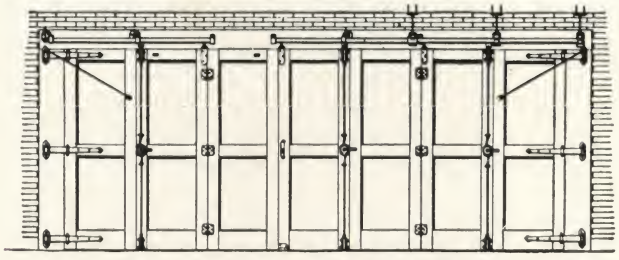
(C) To Specify No. 1135 "Ideal" Equipment—Substitute the number 1135 for 1035 in the first numeral and omit the letter "B" in the second numeral and the track number, thus No. 1135-3, etc.

Specification

Furnish and install in accordance with the manufacturer's erection details, Richard-Wilcox "Slidetite" Garage Door Equipment as follows:

Doors *(number or otherwise locate)*: No. .... "Slidetite" for opening ..... wide, ... high; door thickness .....

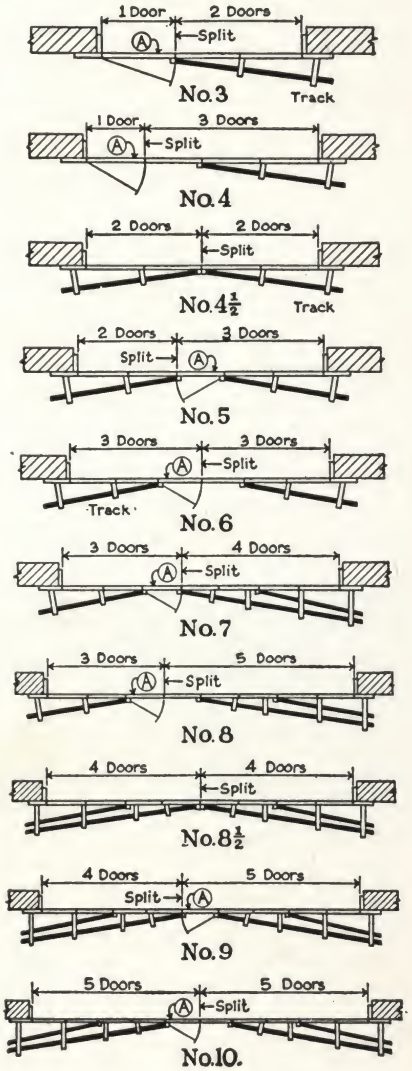
***Note:** If there is more than one opening and the equipment varies, list each door separately.*



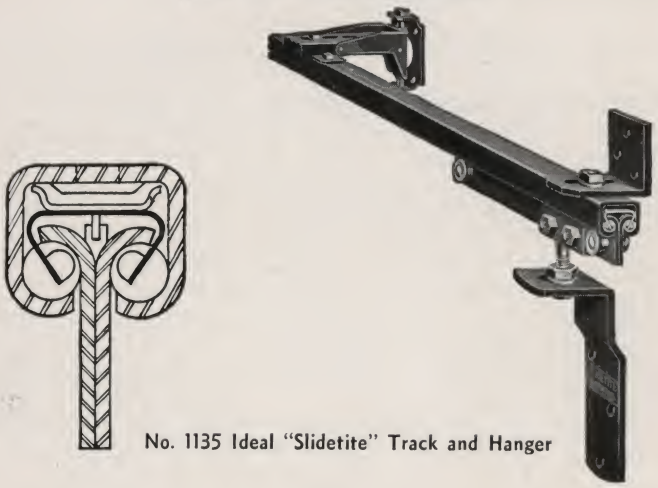
Typical Hardware on No. 1035-B7-31 Set

PLAN TYPES

NOTE: Grouping of doors may be reversed to swing from either jamb from split.
NOTE: Door "A" is a free swinging door.



R-W No. 1135 Equipment



No. 1135 Ideal "Slidetite" Track and Hanger

General—In operation the No. 1135 "Slidetite" equipment is similar to the No. 1035 equipment. It is particularly adapted to the highest type of private garage installations.

The track and hanger units are similar to the "Ideal" elevator door equipment and operate with exceptional smoothness and ease.

Except for (1) the "Ideal" track and hangers and (2) the cremone bolts, the equipment is the same as described for the standard No. 1035 sets.

Tracks and Hangers—The door hangs from a wide rider-bar, rolling over a series of hardened steel balls, which in turn, roll along a carefully milled steel track groove. Friction is practically eliminated. A ball retainer keeps the steel balls accurately spaced at all times.

Cremone Bolts—The No. 617 (and 617x427, when specified) cremone bolts are standard with the No. 1135 equipment.

R-W "Ideal-Sliding" Garage Door Equipment

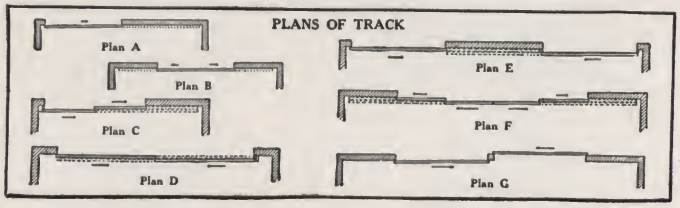


"Ideal-Sliding" Track Assembly

This is high class hardware in which "Ideal" ball bearing track and hanger assemblies support sliding doors. The doors hang from a wide rider-bar rolling over a series of hardened steel balls, which in turn roll over a carefully milled track groove, thereby reducing friction to a minimum.

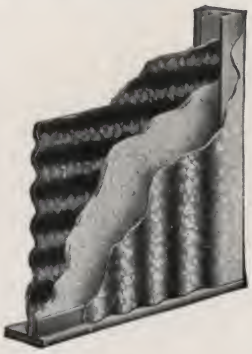
"IDEAL-SLIDING" SETS

	Size of opening, ft.	Using equipment No.	Maximum width of opening, ft.
Plan C	up to 8	457 (without weatherstrip)	10
Plan A	up to 8	454 (without weatherstrip)	20
Plan B	up to 8	454 (without weatherstrip)	13
Plan D	up to 16	457 (without weatherstrip)	20
Plan D	up to 16	456 (with weatherstrip)	20
Plan E	up to 8	457 (without weatherstrip)	10 ea.
Plan F	up to 8	457 (without weatherstrip)	20
Plan G	up to 8	454 (without weatherstrip)	10



R-W FIRE DOORS AND HARDWARE

The R-W line of fire doors and hardware is one of the most complete manufactured. It is inspected by the Underwriters' Laboratories, Inc., under the direction of the National Board of Fire Underwriters and bears the Underwriters' label. Both tin clad two-ply and three-ply doors are made as well as the No. 447 fire wall doors. Hardware for both sliding and double sliding doors is made in both flat and round track in various styles. In the illustrations below either tin clad or corrugated doors can be furnished, according to requirements.



R-W No. 447 FyeR Wall Corrugated Sheet Metal Doors

Built in either square top or incline top, and can be mounted with sliding door hardware, swinging door hardware and vertical door hardware. Especially rigid, thickness of door 2⅝ in., weight about 5 lb. per square foot.



R-W No. 201 Single Link Flat Track Fixtures

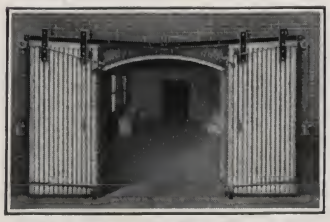
This fixture is for single sliding doors and requires 13½ in. on side wall toward which door closes and width of opening plus 19 in. on the opposite side. Fusible link is exposed in the opening. When specifying width and height, do not say doors when you mean openings, as doors must lap 4 in. on each side and at top



R-W Single Link Flat Track Fire Door Fixtures

This fixture is used for openings where there is not enough headroom to place track on an incline of ¾ in. to the foot. Two sets of weights are used to balance the door. The back weights are held in position by a fusible link. In case of fire, this link fuses and allows back weights to drop, and the front weights then pull the door shut.

Same style as No. 201 except that it operates on level track. Has one fusible link which is exposed in the opening



R-W Single Link Flat Track Fire Door Fixtures

This fixture is the same as No. 201 except that it is applied to pairs of doors. Designed to meet special conditions, such as not sufficient space on one side to slide a large door, or if an overhead carrier system track passes through the opening.

This type has one fusible link on each door, and both are exposed in the opening



R-W Automatic Fire Door Fixtures

The automatic link and cord arrangement on this fixture extends above the opening of ceiling, and when used with doors on both sides of wall same extends through, so that the fusing of link on either side will cause the doors to close. No. 643 Door Closer and Check may be substituted for weight closing device if desired. Fixtures furnished for either flush or lap doors

R-W NO. 1300 AUT-O-DOR ELECTRIC DOOR OPERATOR

Description

In bringing out the No. 1300 Aut-O-Dor Operator, we have kept pace with modern times by developing an Electric Door Operator that is neat in appearance and compact in design. We have eliminated the long levers and connecting arms that have so detracted from the general appearance of the door operators in the past.

We believe the No. 1300 Aut-O-Dor Operator to be the neatest door operating mechanism on the market today and when installed on the doors, it does not detract from the artistic design of the building.



No. 1300 Aut-O-Dor Unit Designed for Either Plain Swinging or Sliding-folding Doors

Installation

Heretofore, the problem of installation has been a very vexing one. In the No. 1300 Aut-O-Dor Operator we have again complied with the popular demand, by developing a door operator so simple in design that it can readily be installed in an hour's time by any handy man, exclusive of the electric wiring.

The No. 1300 Door Operator is set in place in much the same manner as a liquid door check. It is only necessary to put three bolts through the top rail of the door and two lag screws or cap screws into the door jamb to install each unit, one unit being used on each side of the opening. In other words, there are only 10 bolts and screws to attach to make a complete installation.

Control

It is not necessary to run electric conduit to the rear of the building in order to operate an Aut-O-Dor, throughout the length of the garage. By means of an especially designed switch mounting, the doors may be operated by a small overhead cable, which is regularly furnished. As many cords may be dropped from the cable as desired. Cords are usually hung the full length of the driveway, and floor men find it more convenient to operate the doors from the pull cords than from wall switches. If desired, standard three and four-way switches can be secured from any electrician and used for operating the doors instead of the pull cords.

Inasmuch as no special switches are required to operate this controller, they are not furnished regularly. Any electrician can install as many sets of push button switches in the office and other places as necessary.



No. 1300 Aut-O-Dor in Fire Station

Safety Features

In order to guard against accidents, we have designed our No. 1300 Operator so as to take care of every emergency.

Should the electric current be off, the doors may be operated by hand from the inside by merely pulling the release cord. The introduction of this feature means that at no time are your customers locked in or out.

In case the doors are hit when in motion the crank arm is propelled through a friction clutch which allows slippage so that no damage is done to the mechanism. By pushing any operating button a second time the doors may be stopped in the middle of either cycle of operation.

As the doors are opened and closed by means of a crank, they start opening very gradually, the action becoming more rapid in the middle of the operation and stopping in a slow, easy manner without any sudden jerk or pull on the doors. This keeps the doors in good shape and will not break the glass by slamming.

Another great feature derived from the crank movement is that power increases toward the end of the operation. This makes it possible to completely close the doors against a heavy wind without any strain whatsoever on the mechanism.

When the doors are closed they are locked and cannot be blown open by a wind.

Various Uses

Our No. 1300 Operator has been installed and is operating successfully on the following types of openings:

Garage doors of all hinged types.
Cooler doors in packing plants.
Small straight sliding doors.
Secret doors in private homes.
Outside gates.
Bake oven doors.
Kiln doors, and many other places too numerous to mention.

Wherever there is a small reciprocating motion there is a use for our No. 1300 equipment.

Time Switch for Fire Station Use

The Richards-Wilcox No. 1300 Aut-O-Dor Electric Door Operator has met with universal approval among the architects, as well as with Fire Department officials, for controlling large entrance doors in fire stations operated by a time switch.

In Fire Departments, it is important that when an alarm is turned in that the equipment leave the building in the shortest time possible and that the doors be controlled with the least amount of effort. By a slight pull on a cord hanging conveniently over the driver's seat, the doors are opened, and after the equipment has left the building the doors are automatically closed after a predetermined lapse of time. In case of unavoidable delay in leaving the fire station, a second pull on the switch cord will reset the timing of the time switch. The time switch has a motor as a time element and is easily adjusted.

The doors may be opened and closed electrically independently of the time switch without the necessity of disconnecting the time element.

R-W NO. 448 "SupeR-Way" DOORS

No. 448 "SupeR-Way" Doors

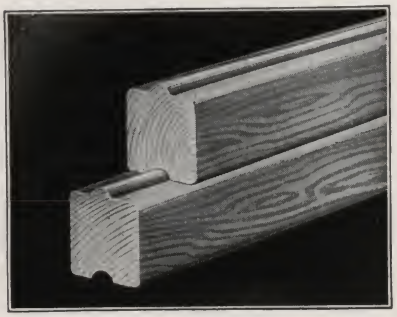
Adapted To—"SupeR-Way" doors are especially recommended for railroad freight sheds, baggage rooms, warehouses, shops, roundhouses, and for all factory purposes where strength and permanence are essential.

No Strain—In a "SupeR-Way" Mill-type Door there is no strain whatever on any of the wood members. All hardware attachments are made directly to the steel frame. The weight of the doors is carried by the built-in steel frame and by hinges, hangers and other hardware which attach not to wood, but to steel—steel-to-steel throughout.

Frame—A "SupeR-Way" Mill-type Door consists of a steel frame which is complete in itself. The illustrations will show, at a glance, that the wood members have nothing to do with hanging this door, but that the weight is carried by the steel which is not subject to sagging, warping and pulling apart common to ordinary doors.

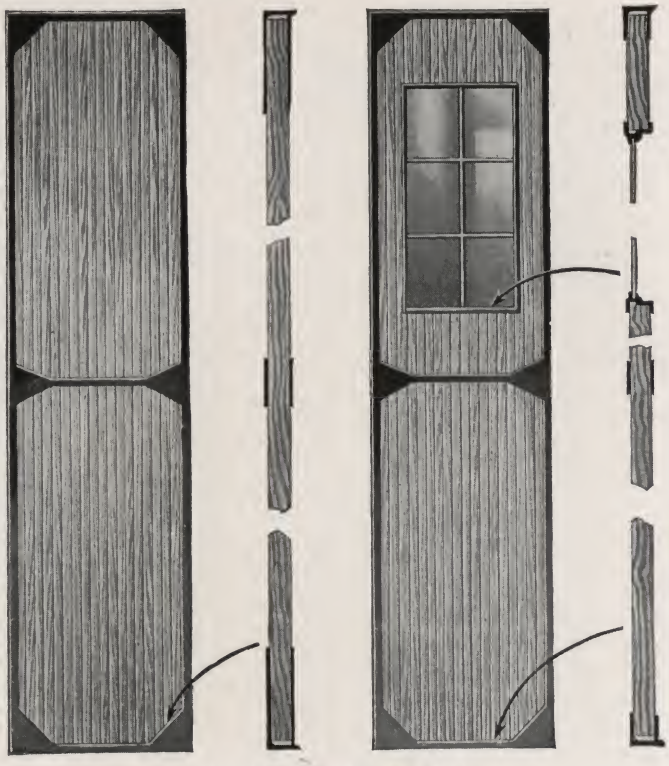
Wood Units—Tongued and grooved units 1¾ in. square are fitted into this frame and nailed through the tongue and groove, piece by piece, to each other. The nails are thus embedded between the strips—not a nail exposed anywhere.

"SupeR-Way" Mill-type Doors are free from pulling apart of the wood sections. This common complaint in other doors is not experienced because the method of keying the wood members together makes a solid, firm construction, much superior to the paneling of the ordinary doors.



Cross Section of Wood Members

No Bolts—All of the steel members are welded together, not bolted, making a permanently strong and rigid construction. There are no bolt ends or nuts sticking out anywhere. Everything is snug and trim. The result is a door 2¼ in. thick around the edges, which is stronger and more durable than any 2½- or 3-in. door built on the usual lines. Extremely high doors are built with 3-in. frames.



No. 448 "SupeR-Way" Door

Doors—The construction of hinged doors is the same as sliding "SupeR-Way" doors except that a steel center member is built into the doors, to provide a metal-to-metal attachment for the center hinge as well as for the top and bottom hinges.

R-W NO. 434 HEAVY INDUSTRIAL DOOR HARDWARE

Operating Doors

No. 434 equipment operates doors in the same manner as the "Slidetite" equipment described in the section on garage doors. (See third preceding page.)

The doors are locked by heavy cane bottom bolts, and by heavy spring top bolts. All of the hardware is extra heavy and is adapted to both wood and steel doors.

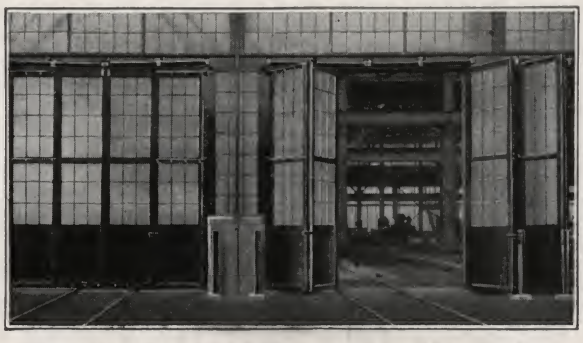
No. 434 Hardware

The R-W No. 434 hardware consists of hangers, tracks, brackets, hinges, locking bolts and hold open latches. When wicket doors are used, hinges and latch are furnished.

Tracks and Hangers—The hangers have a fifth wheel mounted horizontally to take the side thrust. The tracks are Nos. 375, 233 or 533 depending on sizes of doors. See fourth preceding page for track dimensions.

Hinges—Made with long straps, which extend across the door. The straps are made of ⅜x2½-in., ⅜x3-in. and ½x3-in. stock. Pintles for jamb hinges with disc bearings are made of 5-in. stock for hinges with 2½-in. straps, and of 6-in. stock when used with hinges 3 in. wide. Pintles for hinges with ball bearings are 1 in. wider. These pintles are made in various ways, according to requirements at the jamb. All hinges are bolted thru the door.

Regular type equipped with hardened cadmium plated disc bearings and cadmium plated pintle pin. Also made ball bearing, the ball bearing unit being cadmium plated. This makes an ideal combination and an ornamental as well as a very easy operating installation.



"No. 434 Hardware Is Built to Stand Up When Used on Heavy Doors"

Hold Open Latch—A hold open latch bar is attached to the outside of one door of each pair when doors open out. The hold open latch is attached to a post or a section of rail set in the ground.

Wicket Doors—A pair of heavy tee hinges and a heavy warehouse door latch are furnished for wicket doors when so ordered.

R-W TOP AND BOTTOM ROLLERS FOR AIRPLANE HANGAR DOORS

General

The Bottom Rollers described were designed especially for airplane hangar doors. Mechanically and scientifically correct designing, high quality materials and careful workmanship guarantee top and bottom rollers which will withstand an unusual amount of abuse, which will last for years and which will permit one man to easily, quickly and smoothly open or close the large airplane hangar doors to which they are to be attached. Top rollers only act to steady and guide the travel of the doors. Bottom rollers carry the entire weight of the sliding doors.

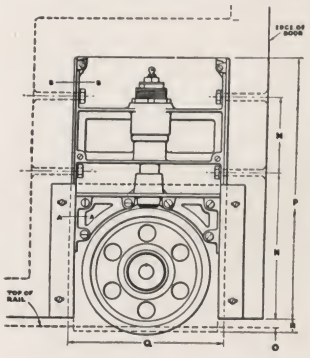
No. 574 Bottom Roller for Round-the-corner Doors



No. 574 Bottom Rollers come assembled as complete units all ready to set into the 12x20 in. spaces allowed for them in the doors. Each unit is quickly, easily and firmly attached to door with four ½-in. bolts.

Malleable iron and steel is used throughout.

Doors weighing up to 3000 lb. each, are easily, smoothly and quickly moved around corners by one man due to the large diameter of the wheel and to the bearings used throughout the unit. Timken bearings may be substituted for the ball bearings in the wheel if so desired. Felt washers protect the ball bearings of the wheel from dust or grit. All bearings are oiled by the Alemite method.



Wheel operates on a minimum radius curve of 2 ft. 6 in. Wheels are machined for 12 or 16-lb. A.S.C.E. industrial rails as ordered.

When ordering state weight and make of rail.

To adjust roller remove top plate, loosen lock nut and turn adjusting screw up or down to desired position. There is a total vertical adjustment of 1¼ in.; ¾ in. up and ½ in. down from normal position. Bottom of door when in normal position is ¾ in. above top of industrial rail.

DIMENSIONS OF NO. 574

M	N	O	P	Q	R	Wheel	
						Tread diameter	Over-all diameter
6 in.	11 in.	*¾ in.	20 in.	12 in.	1½ in.	8⅝ in.	9⅞ in.

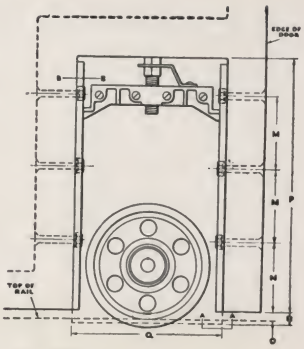
*These dimensions are normal. Adjustment is provided to raise the door ¾ in. or lower it ½ in.

No. 573 Bottom Roller for Straight Slide Doors



No. 573 Bottom Rollers come assembled as complete units all ready to set into the 12x20 in. spaces allowed for them in the doors. Each unit is quickly, easily and firmly attached to door with six ½-in. bolts. Cast iron and steel is used throughout, wheel is machined. Doors weighing up to 3000 lb. each are easily, smoothly and quickly moved by one man due to the large diameter of the wheel and to the bearings used throughout the unit. Timken bearings may be substituted for the ball bearings in the wheel if so desired. Felt washers protect the ball bearings of the wheel from dust or grit. All bearings are oiled by the Alemite method.

To adjust roller remove top plates, swing out lock plate which is loosely riveted to adjusting frame, and turn adjusting screw up or down to desired position. There is a total vertical adjustment of 1¼ in.; ¾ in. up and ½ in. down from normal position. Bottom of door when in normal position is ¾ in. above top of industrial rail.



DIMENSIONS OF NO. 573

M	N	O	P	Q	R	Wheel	
						Tread diameter	Over-all diameter
6 in.	5 in.	*¾ in.	20 in.	12 in.	1½ in.	8⅝ in.	9⅞ in.

*These dimensions are normal. Adjustment is provided to raise the door ¾ in. or lower it ½ in.

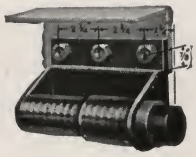
No. 573 Top Guide Roller for Straight Slide or Round-the-corner Doors

Made especially for use with tubular and structural steel doors. The large diameter of the roller plus its graphited bronze bushing accounts for its ease and smoothness of operation.

Furnished in three sizes for attachment to 2½, 3 and 4-in. steel doors.



573 Top Guide Roller



Top Bumper



Bottom Bumper

R-W NO. 1099 "OveR-Way" GARAGE DOOR EQUIPMENT

Operation—Slide vertically on tracks to an overhead position under the ceiling. The lifting mechanism consists of two helical oil tempered springs which perfectly counterbalance the weight of the door. Chains are used instead of cable. The sheaves that connect the chains with the springs run on ball bearing spindles. The rollers are of steel, hardened, with ball bearings.

Doors—Doors may be specified with or without sash. The doors have exceptionally rugged frames, strong panels and shiplap joint construction.

Jamb Construction—No special jamb construction is necessary.

The jambs may be of any material, but a flat wood or metal surface must be provided to which to attach guide tracks.



Hinges—Doors are fastened together with a new type of hinge especially developed for this door.

Size of Opening—Doorways varying in size from 8 ft. x 7 ft. to 16 ft. x 12 ft. may be equipped with these doors.

Headroom and Sideroom—Our standard equipment for openings up to 10 ft. x 8 ft. 11 in. requires a minimum of 11 in. headroom. Openings from 10 ft. 1 in. x 9 ft. to 12 ft. x 12 ft. require 12 in. Openings from 12 ft. x 12 ft. to 16 ft. x 12 ft. require 15 in.

Sideroom required is approximately 5½ in.

McKEE DOOR COMPANY

MAIN OFFICE AND FACTORY
6224-6228 South Oakley Avenue, CHICAGO, ILL.

BRANCH OFFICES
ST. LOUIS, MO., McKee Door Co. of Missouri, 713½ Chestnut Street GRAND RAPIDS, MICH., McKee Door Co. of Michigan, Campau Building
REPRESENTATIVES IN PRINCIPAL CITIES

Products

Manufacturers of McKee Doors, of sectional overhead type; special hardware; and electric door operators; for garages, service stations, factories, warehouses, and many other uses.

Description

McKee Doors are furnished complete, including door sections, hardware, locking device, counterbalancing means, tracks, stop moulding, hangers, and installation.

Doors are in horizontal sections, which raise vertically, turning to a horizontal position above the opening, giving a full clear opening. Ball bearing rollers at each section engage a 2-in. heavy gauge track designed to prevent door and rollers from disengaging or getting out of line.

Doors wedge tightly in a full closed position against the moulding or jamb, weathering wind, rain or snow. Doors operate easily, requiring no effort in opening or closing, giving smooth, quiet operation.

Construction and Materials

Standard doors are made of White Pine or Sitka Spruce, with wide stiles and rails, and ⅜-in. 3-ply fir panels, of blind mortised and tenoned construction.

Special designs as Battan doors, raised panels, raised moulding, segment heads, and of various lumbers, can be built to specifications.

A Super Motor Spring Counterbalance

Two spring assemblies are used on each door. The motor type spring is made of the highest grade flat tempered spring steel, being encased in a steel housing, gives complete safety in operation, and makes a neat installation. Spring assemblies are full ball bearing with direct pull giving perfect and even counterbalance. Springs are used to only a small part of their efficient pull, making them easily adjusted.

Cable lifting means from spring to bottom of door is $\frac{3}{16}$-in. pliable steel aircraft cable of 3100 lb. tensile strength.

Hardware

All rollers are furnished ball bearing.

Hinges are fastened with carriage bolts.

The locking device operates from either side, being key operated from outside. Heavy steel bars lock in tracks on each side, having adjustable guide brackets.

Hardware can be furnished rustproof, cadmium plated, upon special order.

Tracks are mounted with 10-gauge brackets, or on special and larger doors, are mounted with angles.

Truss rods are furnished on doors 12 ft. and wider.

Special Constructions Furnished

A rubber astragal or angle on bottom rail.

High lift construction, adaptable in service stations over hoist, is furnished with extended vertical tracks along wall above opening before turning horizontally. A special cable drum effectively counterbalances door without blind sections.

A chain hoist is recommended furnished on all large doors of manual operation.

Extra heavy hardware of a 3-in. 11-gauge track, heavy machined rollers, and heavy hardware, is furnished where specified on extra large doors.

Vertical lift doors or special hardware for various requirements arranged for weight or special type counterbalance.

Low headroom construction to install a door in as small as 6-in. space above opening, giving a full clear opening, when door is raised.

Electric Operators

Doors any sizes may be electrically operated. For heavy use, an industrial unit fully automatic with a three-button switch, stops, opens or closes door in any position by pressing button. A limit switch automatically breaks the circuit when door completes its travel. An overload switch prevents door closing on an obstruction in the opening.

A residential type unit with a single-button switch operating in low voltage is adaptable for all purposes.

Write for name of nearest representative to serve you.

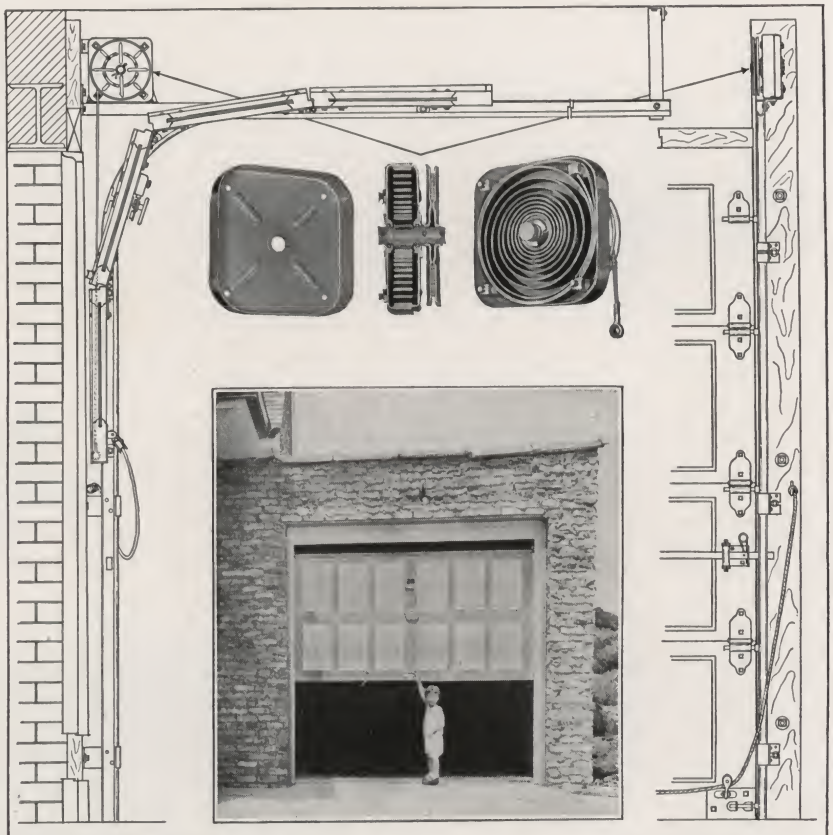
Standard Space Requirements

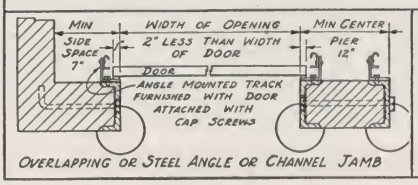
Headroom, smaller sizes 14 in.; larger sizes 18 in.
Center pier: smaller sizes 8 in.; larger sizes 12 in.
Side space: all sizes 6 in.

Note: Above dimensions may be reduced by changes in construction and installation.

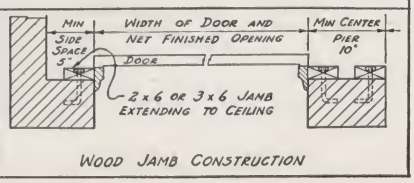
Stock Sizes

8 ft. 0 in. x 7 ft. 0 in.; 8 ft. 0 in. x 7 ft. 6 in.; 8 ft. 0 in. x 8 ft. 0 in.; all 1¾ in. or 1⅜ in. thick.
8 ft. 0 in. x 9 ft. 0 in.; 8 ft. 0 in. x 10 ft. 0 in.; 10 ft. 0 in. x 10 ft. 0 in.; all 1¾ in. thick.





OVERLAPPING OR STEEL ANGLE OR CHANNEL JAMB



WOOD JAMB CONSTRUCTION

THE STANLEY WORKS

Member of The Producers' Council, Inc.

Manufacturers of Stanley "Roll-Up" Doors

NEW BRITAIN, CONN.

NEW YORK, N. Y., 100 Lafayette Street
CHICAGO, ILL., 61-67 West Kinzie Street
PHILADELPHIA, PA., 617 Filbert Street
LOS ANGELES, CAL., 407 American Bank Building
SAN FRANCISCO, CAL., 576 Monadnock Building
SEATTLE, WASH., 619 Mutual Life Building
CLEVELAND, OHIO, 1404 Builder's Exchange Building

For School Wardrobe Hardware, see Manufacturers' Index

STANLEY "ROLL-UP" DOORS

NO. 2711

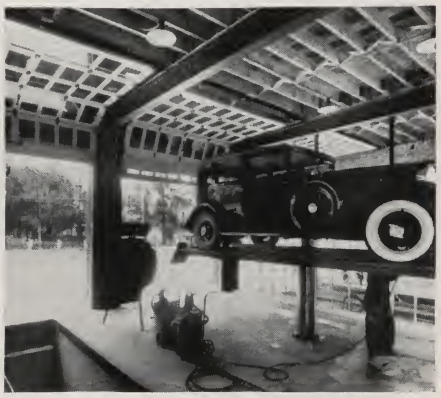
Doors and Hardware



3-car Residence Garage



20x11-ft. Door on a Municipal Undertaking



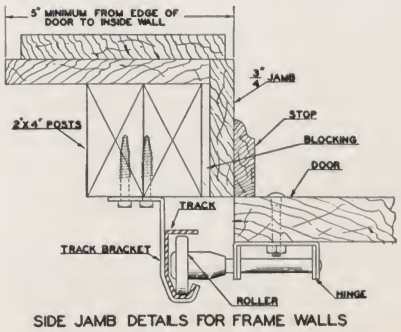
10x10-ft. Door on Service Station
Doors lift up additional 3½ ft. to clear cars on hydraulic lift

Stanley "Roll-Up" Doors cover complete equipment, doors and hardware, for any garage type of opening—private and public garages, service stations, industrial and commercial buildings, fire houses, markets, warehouses, and many other types of buildings.

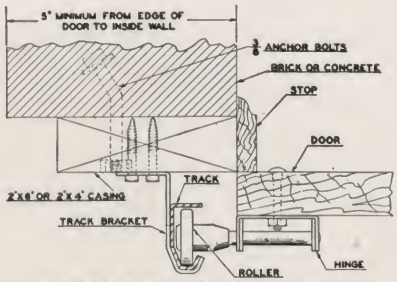
Doors operate overhead, sliding up vertical tracks and resting when open on horizontal tracks. The action is so easy that a child can easily open or close the door. Snow or ice piled against the door in no way affects the ease of operation. The door is so well counter-balanced by the heavy coil springs that it can be left open in any position, providing ventilation and light when desired. A rope is used in closing the door, an easy pull bringing it down smoothly and quietly.

The edges of each door section are rabetted. The cam pin engaging in the cam pin bracket forces the door against the stops, which are applied after the door is in place. Doors fit snugly at top, sides and bottom, and insure a weather-proof installation.

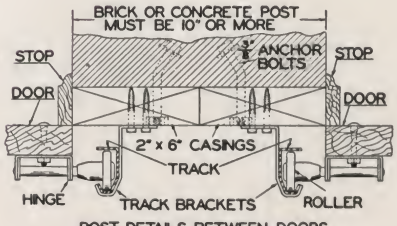
The vertical spring arrangement,



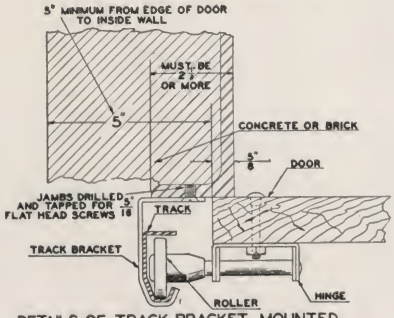
SIDE JAMB DETAILS FOR FRAME WALLS



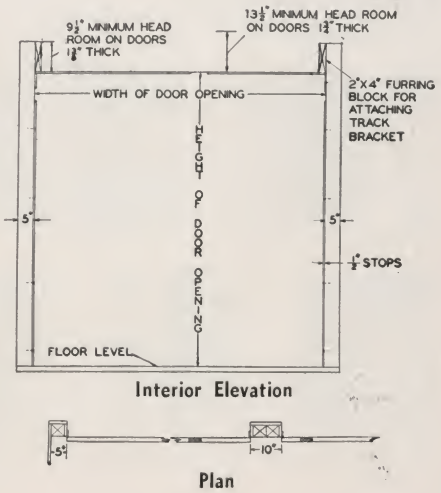
SIDE JAMB DETAILS FOR MASONRY WALLS



POST DETAILS BETWEEN DOORS FOR MASONRY WALLS



DETAILS OF TRACK BRACKET MOUNTED DIRECTLY ON CHANNEL IRON JAMBS



Interior Elevation

Plan

through extensive tests, has been found to be the best method of counter-balancing doors, except those of unusual size. The strain of the springs is put entirely on the jambs, which are best suited to absorb it. Adjustment of spring tension is easily accomplished by screwing the spring up or down on the adjustment plates.

There is nothing complicated about installing Stanley "Roll-Up" Doors. All holes for hinge bolts, cylinder of dead bolt and cam pin brackets, also mortises for bottom brackets, are drilled at the factory, enabling any carpenter to erect a door in as little or less time than needed to install a swinging or folding door.

SPECIFICATIONAL DATA

Doors

Doors of any size can be furnished in any design. The designs shown below are carried in stock in sizes 8 ft. x 8 ft., 8 ft. x 7 ft. 6 ins. and 8 ft. x 7 ft., 1⅜-in. thickness. Other stock sizes range up to 14 ft. x 14 ft., 1¾-in. thickness. Doors are regularly made in sections—four for doors up to 9 ft. in height, five for doors from 10 to 11 ft., six for doors from 12 to 13 ft., and seven for 14-ft. doors. Doors up to 9 ft. in width have six panels, those from 10 to 12 ft. have eight, and 13 and 14-ft. doors have ten.



Showing Spring Arrangement

Doors 8x8 ft. and smaller, 1⅜ ins. in thickness, are of No. 1 Douglas fir, with vertical grain stiles and rails, mortise and tenon joints, dowelled and assembled with waterproof glue. Panels are three-ply fir veneer. These sizes can be furnished 1¾ in. in thickness on order, with dowelled joints, and with white pine stiles and rails and fir panels. All doors larger than 8x8 ft. are 1¾ in. in thickness unless specified, and made with white pine stiles and rails and fir panels. Holes are drilled at the factory for hinge bolts, cylinder of dead bolt and cam pin brackets, also mortises for bottom brackets. Doors are carefully sanded, free from knots, and can be made to match any style of architecture. Regularly furnished unpainted and unglazed.

V-joint doors and special designs can be made to order, also tin-clad and metal doors. High-lift doors for clearing cars on hydraulic lifts, and doors with built-in pass doors are also obtainable. Doors 20 ft. wide or wider are regularly furnished with chain operation, which does not interfere with hand operation. All doors can be furnished with electrical operation when desired.

Hardware

Hinges—Specially designed, made of heavy cold rolled steel, of liberal size. They are bolted through the door. Bolts are cadmium plated to resist rust. Hinges are Japanned. For large doors hinges are made extra heavy.

Rollers—Three-piece construction, formed together. Fitted with extra large tool steel balls, with hardened steel raceways. Assembled permanently to the hinges, avoiding the possibility of loss. Rollers are made to slide back and forth on their shafts a maximum of ½ in. to compensate any possible shrinkage or swelling of door. Larger and heavier rollers are furnished for large doors.

Track—Made of heavy cold rolled steel for standard doors, with extra heavy angle iron mounted tracks for large size doors. Flanged edges prevent rollers from slipping out of track. Vertical track is equipped with heavy brackets which hold it firmly against the door jambs. Horizontal track is bolted to vertical track at the front end and to 2-in. angle iron at the back. Two sturdy turnbuckles prevent spreading and insure a strong, rigid support for the door when in the full open position. The whole framework of horizontal track, angle iron and crossed turnbuckles is suspended from the ceiling by chains, permitting quicker and less expensive installation than with the use of timber or steel bracing. Finished in Japanned finish.

Dead Bolt—A sturdy locking device, with a heavy bar which engages in a slot in the track. Adapted for use with any standard make of rim cylinder. Can be keyed alike or master keyed with cylinders on other doors. Operated from the inside by an automatic spring trip. Cadmium plated to resist rust. Special locking devices for locking doors across the entire width can be furnished.

Springs—Made of heavy oil-tempered wire of liberal dimensions. Fully tested for 10% greater stretch than required. Fitted with an adjustment which permits perfect counter-balancing of the door.

Cable—Aircraft type, size 7x19, test 3200 lbs. Runs smoothly over pulleys without hitching or binding. Tinned finish resists rust.

Turnbuckle Truss-rods—Used on each door section of all doors 12 ft. wide or wider, to insure rigidity and to strengthen the doors.

Headroom

A minimum headroom of 9½ ins. is required on all doors 1⅜ ins. in thickness. All 1¾-in. doors take 13½ ins. This headroom must be maintained the full length of the horizontal track, which length equals the height of the door plus 25 ins.

Jamb Construction

Jambs for all doors should extend the height of the door plus the headroom. On doors up to 10x10 ft. the jambs should have inside faces of at least 3½ ins. in width, 1¾ ins. thick. For larger doors, 2x6-in. jambs should be used. The bottom bracket to which the spring is attached extends out 1½ ins., making it necessary for center posts to be a minimum width of 10 ins. for two-door installations. Doors can be readily mounted in frame garages on 2x4's, with the inside edges flush, without extra construction.



Side Hinge and Roller



Dead Bolt



Top Pulley and Cable



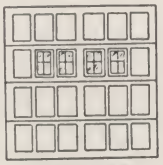
Cam Pin Bracket



Spring Adjustment Plate



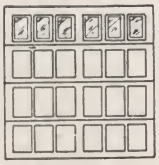
2711-D64



2711-C44



2711-C6



2711-D6



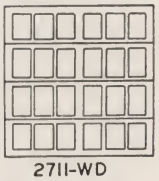
2711-C6 D6



2711-C2 D6



2711-C2



2711-WD

Note: On Larger Doors, Letters "E," "F" and "G" Denote Fifth, Sixth and Seventh Sections.

STANLEY "SWING-UP" DOOR HARDWARE

No. 2730

Hardware Only Supplied

Designed on the pivot principle, swinging a one-piece door up into the open position through the use of large coil springs, where it rests on sturdy tracks. The operation is smooth and easy, due to perfect counterbalancing by the springs. The door can be left open in any position for light or ventilation.

The hardware is adapted for use with either old or new doors. A pair of standard 4 x 8-ft. doors or three doors 2 ft. 8 ins. x 8 ft., no matter how warped or twisted, can be quickly converted into a smooth-working, trouble-free door operating overhead.

Especially suitable for small garages, as the door will operate freely even with the car bumper resting against the door.

The balancing of the door is very simple. A machine bolt is fitted into the end of the spring, and is turned up or down to increase or decrease the tension. Both springs should be given the same amount of adjustment under ordinary conditions. However, it is possible through extra adjustment of either spring to compensate for minor inaccuracies in the garage opening.



8x8 Ft.—2¼-in. Door—Outside View



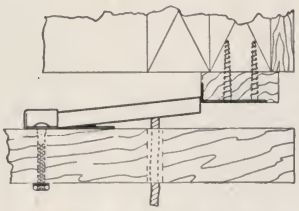
8x8 Ft.—2¼-in. Door—Inside View



16x8 Ft.—1¾-in. Door—Inside View



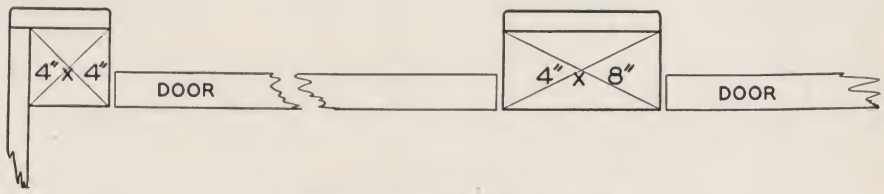
Showing Spring-door in Open Position



Detail of Safety Latch



Rear Track and Bumper





Hanger Bracket

SPECIFICATIONAL DATA

The hardware as regularly furnished is suitable for use on doors from 8 to 9 ft. in width, 7 to 8 ft. in height and 1⅜ ins. to 2¼ ins. in thickness. Also made regularly for a 16-ft. opening, 7 to 8 ft. in height. Hardware for other size doors can be had to order. Electrical operators can also be furnished for "Swing-Up" equipped doors.

Housings—Very heavy, sturdy. The series of three holes permits primary adjustment for light, medium and heavy doors. Heavy axle forms secure anchorage for the spring.

Springs—Heavy heat treated and oil tempered, finest grade. Thoroughly tested at the factory. Attached to axle of housing by a ball bearing swivel. Fitted with machine bolt at door end for adjusting tension.

Arms—The arms which swing the door are made of heavy 2-in. angle iron. Securely fastened to door and housing.

Weatherstrips—Heavy steel plates attached to housings and hanger brackets offer protection from the weather, and also act as side stops. A long steel strip extends height of door on the outside where doors are joined.

Track—Heavy cold rolled steel. Flanged edges prevent rollers from slipping out of track. Front ends are securely bolted to jambs, and rear end suspended from ceiling by braces. These braces are punched at intervals to take care of various heights of ceilings. Heavy angle iron joins rear ends of track and insures a strong, rigid support for the door when fully open.

Hanger Brackets—Carry top of door along track. Equipped with ball bearing wheels. Designed to allow for shrinkage or swelling of door.

Braces—Braces of bridge-truss construction join the two (or three) standard doors together at top and bottom, making a rigid, one-piece door. Prevent warping.

Safety Latch—Holds door securely in open position, insuring against accidental closing. Released by pull on same rope used in closing door.

Pulls—Standard pulls furnished for opening and closing door.

Headroom

Only 2¼ ins. of headroom is required. This headroom should be maintained the full length of the track, which length equals the height of the door plus about 6 ins.

Jamb Construction

Jambs should have inside faces of 3¾-in. minimum width and 1¾-in. thickness, with 7½ ins. between doors in series. No extra construction is necessary. Doors should be 1 in. less in height and width than the opening, to allow ½ in. clearance at top, sides and bottom.

ESTABLISHED 1876

THE J. G. WILSON CORPORATION

GENERAL OFFICES

11 East 38th Street
NEW YORK, N. Y.

P. O. Box 1194
NORFOLK, VA.

CABLE
"Wilcorp, New York"

For Branch Offices, see our Steel Rolling Door Catalogue in Manufacturers' Index

For Rolling Doors, Partitions and Wardrobes, see Manufacturers' Index

Wilson (REGISTERED) SECTIONFOLD DOORS OPERATING OVERHEAD

Experience

The experience and knowledge gained through 56 years of manufacturing wood and commercial steel doors have been consummated in our Sectionfold Doors (Operating Overhead). Experience has taught us the value of the single spring for counterbalancing purposes. It is quite difficult to obtain two commercial springs of absolutely equal characteristics. Unevenness of lifting power will hinder the movement of the door, causing a bind, and naturally increase the difficulty of operation.

The single spring as a method of operating a door means single point of adjustment. This single point of adjustment in the Wilson Sectionfold Door is conveniently located on the outside of the pressed steel door bracket.

The operating spring of Wilson Sectionfold Doors is enclosed in steel tubing. This arrangement removes the hazard of serious injury to the operator that results in case of unprotected spring failure.

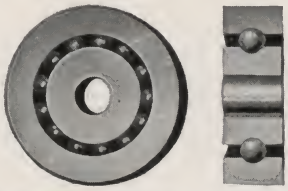
Features of Wilson Construction

Sections—The stiles and rails of each individual section are mortised and tenoned with wedged fit, and steel doweled. The tenon of each rail extends through the stile as shown in the illustration, allowing passage of any water that may seep between the panels and stuck moulding. The bolt of the hinge extends clear through both the stile and rail, holding the two members together and serving as an additional dowel.

Panels—The panels used in Wilson Sectionfold Doors are all 3-ply, built up of fir veneers held together with waterproof glue. The panels after being cut are sealed with lead and oil, to protect the edges, before being placed in the sections.

Hardware—The rollers used to carry the weight of the doors in the overhead position are solid steel, not pressed, of ball-bearing construction turning on machined steel shafts.

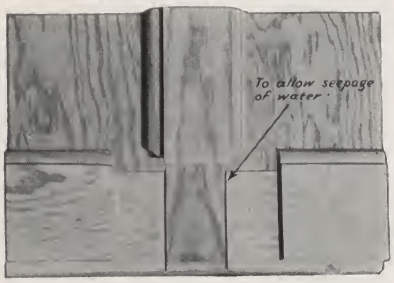


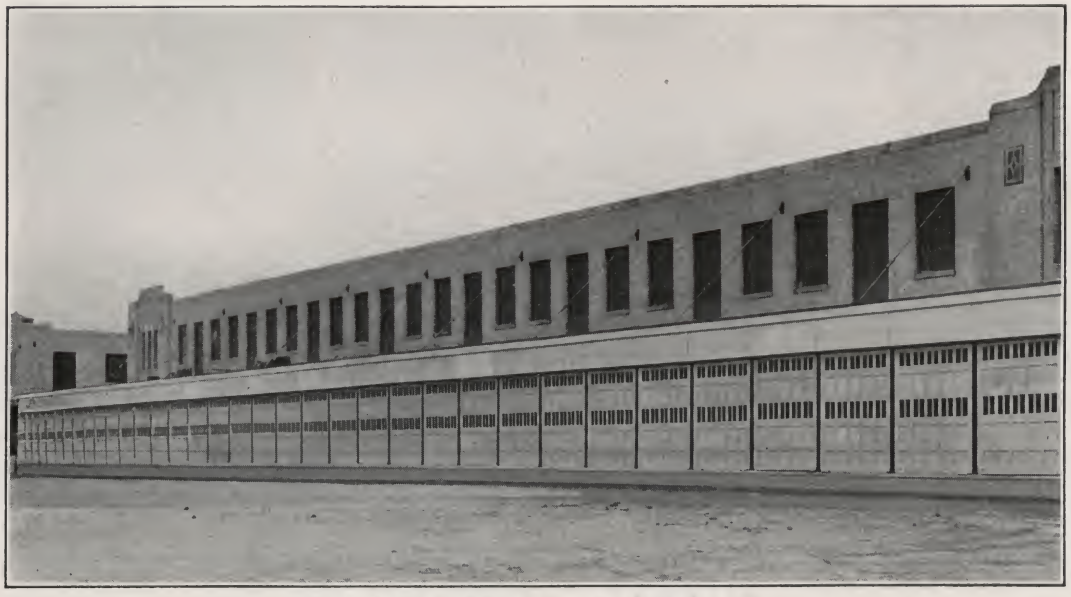


Face and Sectional View of Steel Roller

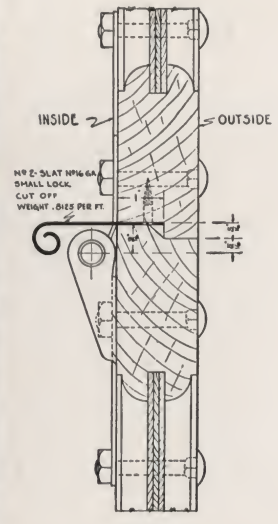


Details of Door Construction





Buffalo Market Terminal Company, Buffalo, N. Y.
Showing a portion of 360 Sectionfold Doors used on this job
THE GEORGE S. RIDER COMPANY, Cleveland, Ohio, Architects THE JOHN W. COWPER COMPANY, Contractors



Reinforcing Strip on Wide Sectionfold Doors

The trunnions and hinges are pressed steel.

The track is of rolled steel formed in sections to give maximum strength, and is secured to the wall with continuous back angle.

Counterbalancing—Operation of the doors is accomplished by the same simple method used so successfully by all rolling steel door manufacturers—the single helical oil tempered spring, enclosed in steel tubing. Iron lifting wheels are fastened directly to the spring shaft. The electrically welded steel lift chain forms a direct contact in these grooved wheels and is used for lifting the door.

Painting—A prime coat of paint is applied at the factory before shipment.

Large Doors

The sections of exceptionally wide doors are braced by a rolled steel section giving the wood section additional strength against wind pressure, when in the closed position and preventing the wood section from excessive sagging, when overhead. Chain operation is recommended on all doors over 120 sq. ft. The chain operating mechanism is fastened directly to the operating shaft. Chain operation is recommended not only for ease of operation, but because it gives a more uniform movement of the door, eliminating unnecessary shocks and undue strains—thus increasing life of door.

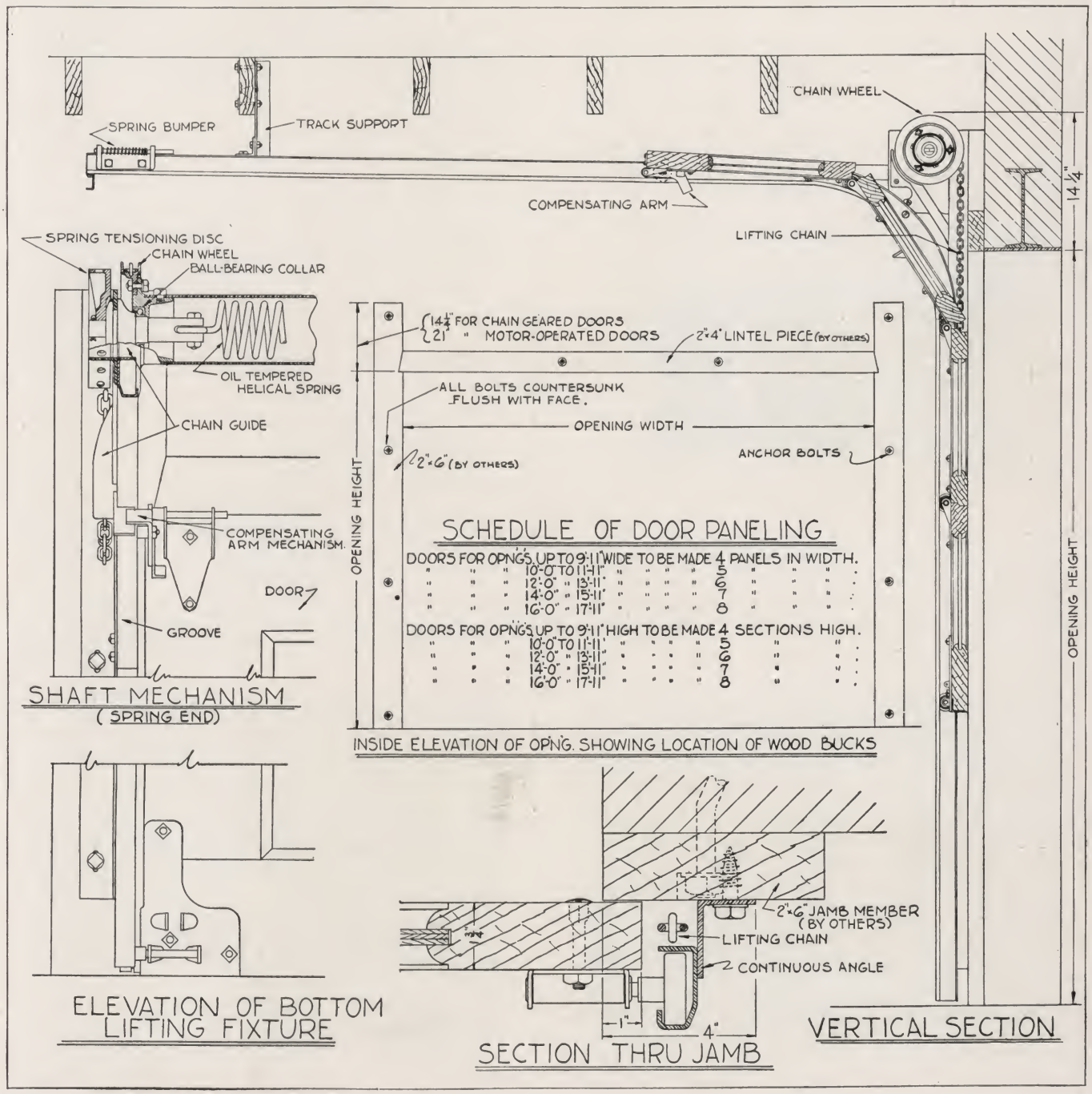
Motor Operation—The equipment supplied consists of motor, reduction gears, limit switch, brake, and a friction clutch arrangement to protect a vehicle passing beneath the door when closing. The unit is directly connected to the door. An emergency hand chain will be supplied when specified.

Stock Doors

For convenience and economy we carry a supply of stock doors for the following opening sizes: 8 ft. in width; the height varying in 6-in. intervals from 7 ft. 0 in. Stock doors also available 10 ft. x 8 ft.; 10 ft. x 10 ft.; and 10 ft. x 12 ft.

Special Doors

For openings in front of hydraulic lifts we have developed a special construction. The spiral drum allows door to lift vertically to any desired height before going into the horizontal plane. Thus, an 8-ft. high door may be raised to lay next to a 13-ft. ceiling without any excessive lifting power required.



THE YODER-MORRIS COMPANY

Manufacturers of Y-M "Clearover" Doors
Y-M Electric Door Operators and Door Hardware
5500 Walworth Avenue
CLEVELAND, OHIO
REPRESENTATIVES AND SERVICE DEPARTMENTS IN ALL PRINCIPAL CITIES

THE Y-M "CLEAROVER" DOOR

For Residence Garages, Public Garages and Service Stations, Warehouses, Commercial and Industrial Buildings and Hangars

Models

Model "E"—For doors up to 144 sq. ft. in area (illustrated at right).

Model "B"—For doors over 144 sq. ft. in area (illustrated on next page).

Model "G"—Featuring the High-Lift for service stations using car hoists.

The Y-M "Clearover" Door, Models "E" and "G" (patents pending), embody an entirely new principle in counterbalancing of overhead doors which insures ease of operation and at the same time is simple and inexpensive. It consists of one or more (depending on the size of the door) extension springs mounted across the door header, attached to each end of which is a triple-compounded ball bearing sheave. Connection



Y-M "Clearover" Doors

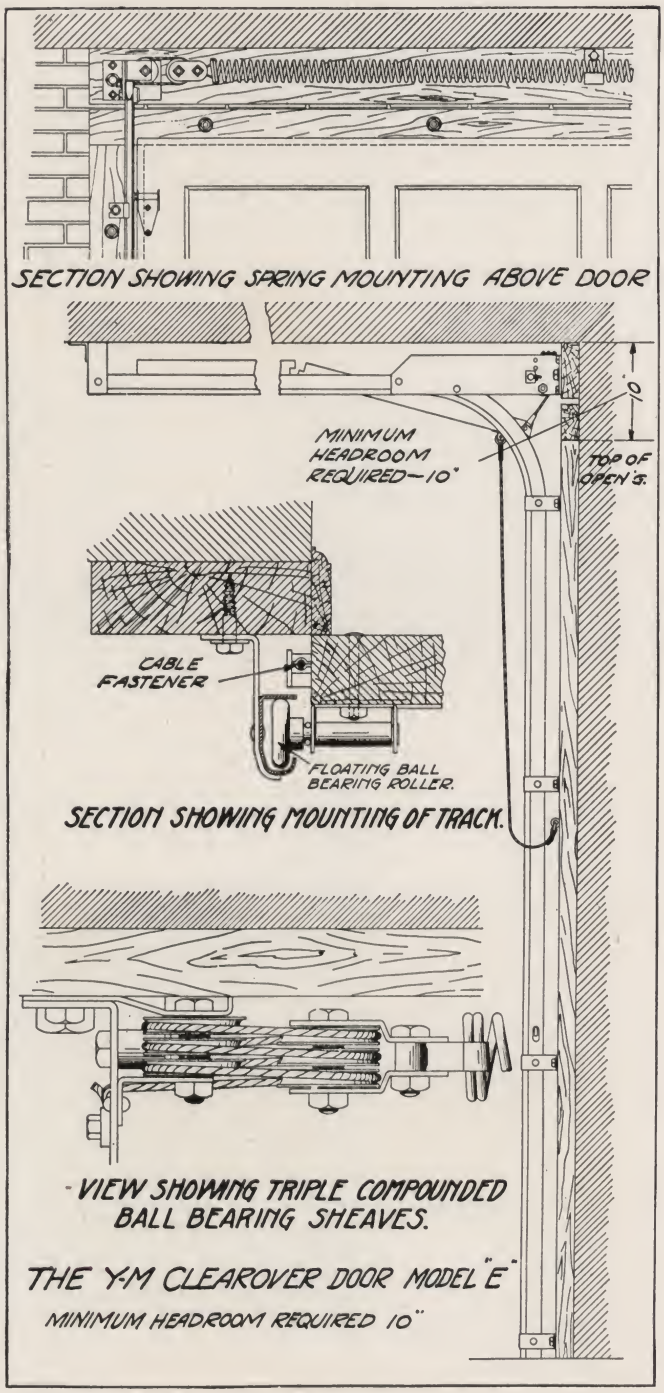
between the springs and the door is secured by means of aircraft cable which is connected to the bottom of the door on each side, then passes up the sides of the door and around the above sheaves, thus assuring perfect and equal balance to both sides of the door and eliminating any possibility of binding. The entire counterbalance mechanism is mounted against the wall above the door.

The ball bearing rollers float on a fixed pin, this feature further providing against binding and preventing the rollers from slipping out of the track.

Door sections are of standard design with stiles and rails of 1¾-in. spruce or white pine and panels of 3-ply laminated fir set with waterproof glue. When specified, doors can be made of any other desired wood, or of hollow metal, kalamein or tin-clad construction.

The simplicity of the Y-M "Clearover" Door makes it trouble free, quiet in operation and neat in appearance. It also reduces the cost of installation to a minimum.

The Model "B" Clearover Door, designed for large openings, embodies a long extension spring on each side of the door. Each spring is fastened to the bottom of the door by means of a heavy malleable iron bottom shoe, extends up along the side of the angle-iron mounted track, passes over a pulley at the top of the track and extends back to the end of the horizontal track. This provides the powerful lift required for heavy doors. Accurate adjustment of the springs insures free and easy operation of the door.



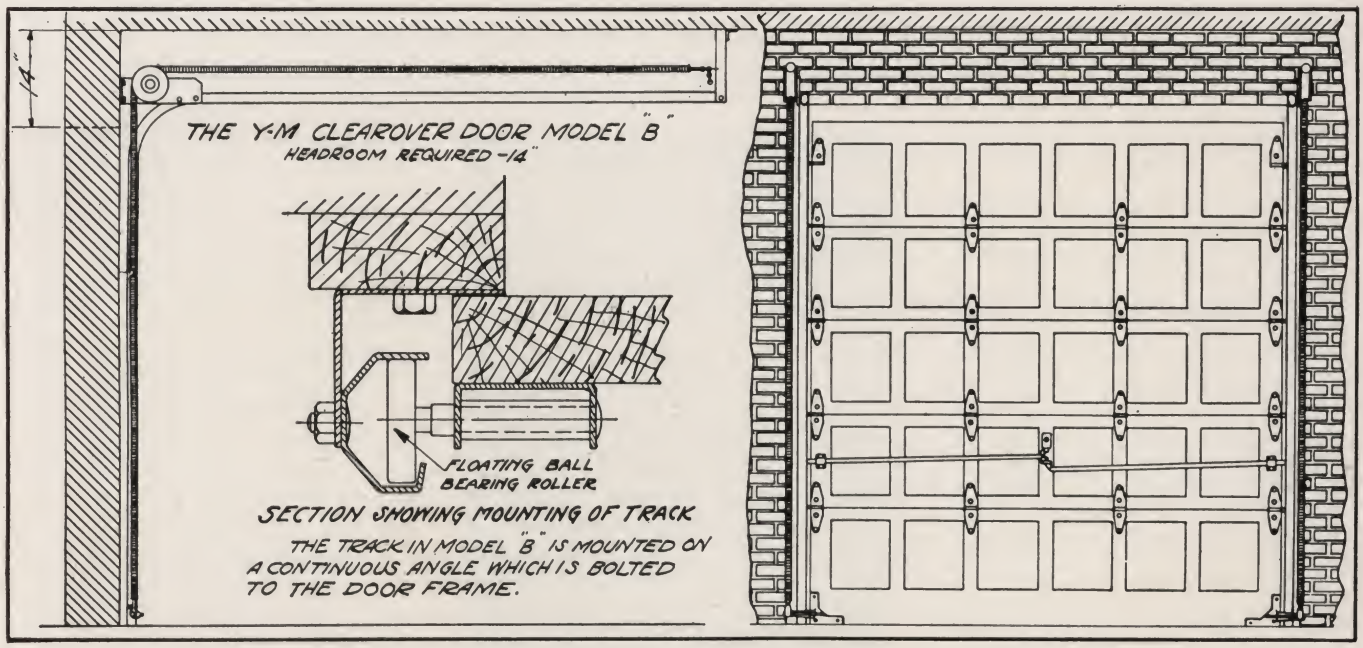
The Removable Mullion

The Y-M Removable Mullion for use with any Model Y-M "clearover" doors, combines simplicity in construction with ease of operation.

When in place it is a durable center post, so designed that the entire floor space adjoining it is free and clear of cables, guy ropes, or other unsightly lifting device. When not in place it is completely out of the way, leaving a clear opening. Due to its perfect counterbalance, it can be moved from one position to the other in a few seconds with very little effort.

Service

Our Engineering Department is always at your service and will gladly submit details and specifications upon request.



Y-M ELECTRIC DOOR OPERATORS AND Y-M HINGES

For Every Type of Door

Y-M Electric Door Operators give satisfactory service under the most exacting conditions. Nine years experience in this field has enabled our engineers to produce a most dependable line of door operators. Each operator is equipped with full automatic control and the necessary safety features, insuring full protection.

Y-M operators are particularly adapted to fire stations, and are in use in many large cities throughout the country. Due to their dependable service they are the choice of many discriminating fire chiefs and are widely recommended everywhere. Emergency-release door brackets permit manual operation of doors.

Remote Control Device—Consist of push buttons of all kinds, ornamental control posts, key switches, and metal and rubber tread switches. Control can be secured from any number of locations desired. Wiring diagrams furnished with each operator.

Heavy Duty Roller Bearing Hinges

Designed for large swinging and folding doors where the service is extremely severe. Engineers who have seen and used Y-M Roller Bearing Hardware pronounce it the most highly developed they have ever seen.



A Fire Department Installation of the Y-M Door Operator



Y-M Standard Operator Shown Installed on Four-fold Doors
Note Y-M 3-in. hinges on doors

PURDY DOOR-OPERATOR CO., INC.

230 Park Avenue, NEW YORK, N. Y.

CONSULT LOCAL TELEPHONE BOOK FOR REPRESENTATIVE

THE "GARAGE-BOY"
(Trade-Mark)

AN AUTOMATIC DOOR OPERATOR FOR RESIDENCE GARAGES

Works from a Wheel-contact Unit in Runway to Open and Close the Doors without the Driver Getting Out of the Car



History—Developed through ten years. Models built to meet the problem in 26 different ways, including traction, weight of cars, electricity, gravity, springs, etc. Sales first made in New York suburbs in 1926. Final model in commercial sale and use since 1931. Testimony below is that of users whose experience extends over three years.

A large number of broad patent claims have been allowed, indicating that no practical non-electric door operator will be made except under these rights. The inventor and owner has been for years in the door business. "Garage-Boy" is now being made for us by a large old-established New England manufacturing company with modern machinery and execution.

Simplicity—Motive power is from weights on wall, nothing electric. Wheel running over the contact-unit in runway makes a cable-pull that releases the door-closing weight when doors are in open position, and the door-opening weight when doors are in closed position. Parts in driving-unit overhead are those for latching and release of weights, so that one weight does not resist the other, and for cushioning the termination of opening and closing movements to prevent slamming. Thus in the driving-unit overhead there are only ten moving parts, and in the contact unit in runway five different parts—a triumph in simplicity of design.

Here, then, in a door operator of great utility and spectacular action, we find just a set of door hardware that will last as long as the hinges on the doors, with no operating cost, no lubrication, and no attention.

Operation by User—User, going to get the car out, opens the doors by hand: when opened fully, they latch open, secure against winds. Driving the car out, the wheel depresses the surface of the contact-unit in runway. This makes a cable-pull that releases the piston of an air cylinder (cushioning member) which travels slowly out of the cylinder (affording time for car to get fully clear of doors), and unlatches doors to close by the closing-weight. Closing-weight continues to bear on doors to hold them closed. On their being opened by any one for entry or exit, they subside to closed position.

But at the return of the car the cable-pull from contact-unit in runway, at one stroke of a single part, disengages the closing-weight and releases the opening-weight; the doors open automatically: and with a speed that makes it unnecessary to stop the car, if contact-unit is placed any fair distance away. Upon the car being driven into garage, the owner is on his feet, and closes the doors by hand. The hand opening and closing resets the weights without the owner needing to know anything about it. He can forget he has a door operator, while getting the service nevertheless, going and coming.

It is when he is seated in the car, under movement, outside the garage, that he gets the service—the answer to what has been called "the meanest thing in using a car," that last straw of unwilling effort to bring the car to a full stop, get out, fix the doors, climb back in again, get settled, and get under way. "Garage-Boy" service, once experienced, becomes the demand of necessity.

Half of the present users are women.

Features—The time-element, effective before doors close, permits car to get fully clear of doorway—essential where setting of wheel-contact unit is close to doors as in a sidewalk or curved approach.

Door movements are cushioned at termination of opening and closing actions: no slamming.

Silence: both in door actions, and in depression of wheel-contact unit.

Doors are always subject to hand operation.

Operating cycle cannot be put out of sequence. Driver never finds closed doors incapable of automatic opening.

Contact-unit resists depression by foot. Momentary depression by passing car wheel is sufficient, without stopping car.

By its thick rubber top, the contact-unit is watertight, weatherproof, and dirtproof.

Contact-unit parts are of a copper molybdenum rust-resisting alloy steel.

Doors may be set to open anywhere from a right angle up to 30° beyond.

Locking—99 of 100 users have discarded the use of their door locks. They lock the car—holding to a good parking habit. The car is as safe as when parked on any city street. Where garage is built in with the house, a lock on the intercommunicating door is sufficient. But doors may be locked when car is in garage, if desired.

Economy—Operating cost is nothing.

Against the low price noted opposite, a saving in cost of certain door hardware may be made—in door holders, locks, and bolts. This device, with double-swing doors and hardware, may be had for the same price as a mere door of any other type. We believe this to be the lowest cost door operator design that will ever be made.

Snow—Contact-unit in runway will operate under snow; but to prevent encrusting of ice, any deep snow should be shoveled clear of this unit at the same time as the doors. Every type of door has to be shoveled clear of snow—to prevent snow falling inward, packing on sill, or freezing door in closed position.

Where swing doors are not protected overhead, architects provide an apron at the sill sloping downward. With bottom of door beveled, snows can be swept away by door upon opening, but not raked in upon closing. The swing door is the only type that affords this convenience.

Testimony

"I have three. If they had cost me a thousand dollars I would call it a good bargain." Otto A. Harbach, Mamaroneck, N. Y.

"It is ace-high." Wilfrid T. Pratt, Scarsdale, N. Y.

"More than satisfactory. No trouble in winter." August L. Beck, M.D., New Rochelle, N. Y.

"Glad to recommend it to anyone. If it cost three times as much would feel it was the finest value." Louis E. Rattner, White Plains, N. Y.

"My satisfaction increases each day. You will meet with great success." M. A. Follman, Scarsdale, N. Y.

Similar testimony may be had from dozens of users whose experience goes back through three years, and from those numbers of satisfied users who have installed in 1931 and 1932.

Space Requirements

Space out from wall, for weights: 3 in.—practical where there is no return space whatever, since the door thickness and hinge offset bring the open door 3 in. out from jamb.

Space overhead: None needed—all of the overhead driving-unit is below the level of the lintel.

Ordering

Price: $50 f.o.b. factory, Massachusetts.

Shipping weight: 107 lbs. including crate.

Local representative: Order through him if you find our name in your telephone book.

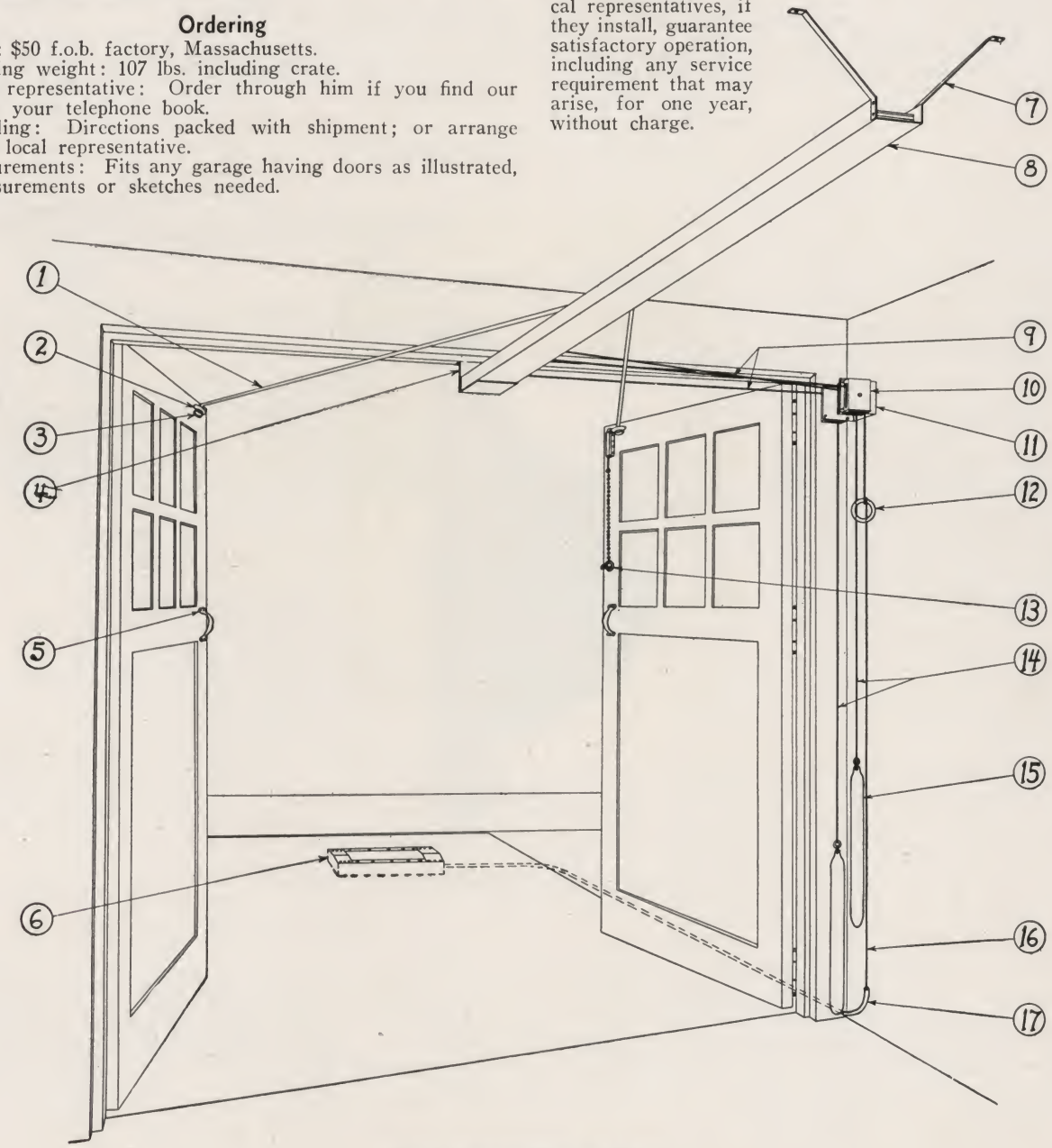
Installing: Directions packed with shipment; or arrange through local representative.

Measurements: Fits any garage having doors as illustrated, no measurements or sketches needed.

Finish: Standard—cadmium-plated parts (nickel appearance), non-tarnishing, on black baked-enamel frames.

Guarantee

We guarantee each door operator against defects in material or workmanship. Local representatives, if they install, guarantee satisfactory operation, including any service requirement that may arise, for one year, without charge.



Detail Description of Parts

(1) Drive-arms—Each arm is pivoted at its outer end to the eye-bolts in the doors.

(2) Eye-bolts—One eye-bolt is bolted to each door.

(3) Adjusting Nuts—These change the position of the eye-bolts with relation to the door, adjusting for inaccuracies of the door frame and for warpage of the doors.

(4) Channel Bracket—Outer end of channel housing the driving mechanism is supported from the door-lintel by this bracket screwed to lintel.

(5) *Door Pulls—One on each door, aid in re-setting the mechanism.

(6) Contact-unit—Located across observed path of wheels on one side or other of runway. All parts rust-resisting alloy. Rubber cover watertight and never stretched in operation, hence cannot pull out. No sump or drain needed. Iceproof. Two sizes, 24½ and 36 ins. broad with contact surfaces 19½ and 31 ins. respectively. Both sizes 8 ins. wide and 4½ ins. deep.

(7) Ceiling Brace—Riveted to channel and screwed to ceiling beams or rafters at assembly. Length and angles adjustable at assembly.

(8) Channel—Houses the motive unit, control mechanism, guide and door drive. All parts greased for life of mechanism. Attached to lintel by bracket (4) and to ceiling or rafters by brace (7).

(9) Drive-cables—Stranded steel cable, breaking strength twenty times maximum working loads.

(10) Sheave Wheels—All seven sheave wheels have ball bearings, greased for life.

(11) Wall Bracket—Located on whichever wall affords a free vertical area for weights. May be placed either side up, according to position desired for the flange that carries two sheaves. Sidewise leeway on wall is permissible for free vertical travel of weights. Flanges may be bent into line with weight-cables.

(12) Hand Ring—Pull on hand ring starts door motive action same as pull caused by wheel depressing contact-unit (6).

(13) Ring Anchorage—Holds any automatic latch out of engagement while automatic door action is wanted. Release by hand locks door.

(14) Weight Cables—Connect weights to driving mechanism. Twenty times stronger than maximum working load.

(15) Motive Weights—Standard sash weights used in building construction.

(16) Trigger Cable—A short 1½-in. movement of this cable by wheel depression of the contact-unit (6) or by hand pull of hand ring (12) initiates the door action.

(17) Connecting Tube—Pipe of iron or brass guides the trigger cable (16) connecting the contact-unit (6) with the operating mechanism (8-10). Pipe can be extended to same wall as motive weights (15) or to the other wall, as convenient. Pipe is secured by watertight connection to contact-unit (6).

*Not included as part of device.

CLEVELAND LOCK WORKS

FORMERLY COLUMBIAN LOCK DIVISION

Manufacturers of Sash Pulleys

1290 East 53rd Street, CLEVELAND, OHIO

EASTERN REPRESENTATIVE: Sargent Building Specialties Co., 16 Warren Street, NEW YORK, N. Y.
SOUTHERN REPRESENTATIVE: John C. Brill Co., 1508 Masonic Temple Building, NEW ORLEANS, LA.

OFFICES OF AGENTS IN PRINCIPAL CITIES

CLEVELAND QUALITY PULLEYS

The design, material and workmanship of Cleveland Pulleys is of the best. That is why they are unqualifiedly guaranteed to give satisfactory service wherever installed. Made in two general styles—Side Sash and Overhead Sash (removable type). When ordering, state the finish, bearing and groove desired.

CLEVELAND SIDE SASH PULLEYS

Case—Made of cast gray iron.

Wheels—Made of cast gray iron, accurately machine turned. They may also be made of cast bronze or brass when so ordered. The wheels run true.

Grooves—Combination rounded grooves, suitable for either cord or chain, are regularly furnished on all side pulleys. Double-square grooves, suitable for chain only, can be furnished when so ordered.

Axles—Cold rolled steel is standard. Brass or gunmetal axles can be furnished when so ordered.

Bearings—Plain axle, roller bearing or ball bearing. Bronze, steel or noiseless wood bushing.

Faces—Cast iron, finished to exact size. Cast or wrought bronze metal faces can be furnished if desired spun through screw holes, making it impossible for the face to become loose.



Standard Side Sash Pulley

Washers—The roller bearing type have antifriction washers and are noiseless.

Mortises—On account of the design, mortises are quickly and easily made.

Standard Finishes—

0—No finish—plain.
01—Lacquered only—not finished.
02—Polished and lacquered.
12—Bright brass.
13—Dull brass, electro-plated.
1D—Dull size, electro-plated.
1ST—Statuary bronze (furnished only on wrought bronze metal faces).
33—Dead black (imitation bower barff).
5—Stainless steel metal face.

Specification Data—

2 -in. wheels for up to 40-lb. sash—100 series.
2¼-in. wheels for up to 100-lb. sash—200 series.
2½-in. wheels for up to 150-lb. sash—300 series.
3 -in. wheels for up to 150-lb. sash—400 series.

CLEVELAND SASH PULLEYS FOR DOUBLE HUNG WINDOWS

Cast Iron Faces				Wrought Brass or Bronze Metal Faces			
Catalog No.	Wheel size, inches	Axle size, inches	Face size, inches	Catalog No.	Wheel size, inches	Axle size, inches	Face size, inches
100	2	3/8	1⅛ x 5	D—106	2	3/8	1⅛ x 5
*200	2¼	3/8	1⅛ x 5	*D—206	2¼	3/8	1⅛ x 5
*220	2¼	3/8	1⅛ x 5½	*D—226	2¼	3/8	1⅛ x 5½
300	2½	3/8	1¼ x 5¾	D—306	2½	3/8	1¼ x 5¾
320	2½	3/8	1¼ x 6	D—326	2½	3/8	1¼ x 6
400	2½ x ½	3/8	1¼ x 6	D—406	2½ x ½	3/8	1¼ x 6
420	3 x ½	3/8	1¼ x 6½	D—426	3 x ½	3/8	1¼ x 6½

*2½-in. wheel furnished at slight extra cost.



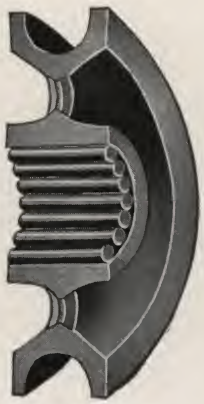
Combination Groove for Cord or Chain



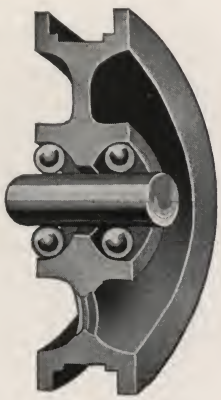
Double Square Groove for Chain only



Plain Axle



Roller Bearing



Ball Bearing

CLEVELAND OVERHEAD SASH PULLEYS (REMOVABLE TYPE)

Used in mullion windows where insufficient space is provided between windows to take care of weights; also where a large area of glass is desired and reduced width of mullion. Weights are carried at sides of windows.

Cleveland Overhead Sash Pulleys have been installed by contractors in various buildings erected under the control of the Supervising Architect's Office of the Treasury Department, Washington, D. C.

Case—Made of cast gray iron.

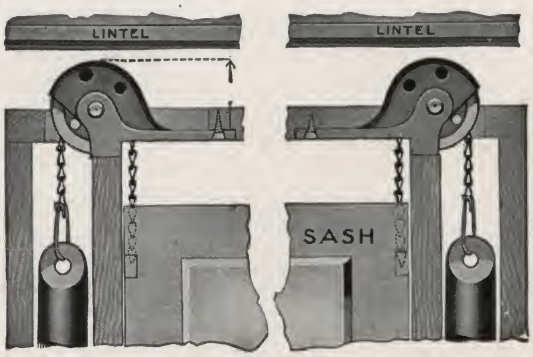
Wheels—Made of cast gray iron, accurately machine turned. Cast bronze or brass when so ordered.

Grooves—Regularly furnished with double square grooves, *suitable for chain only.* Combination rounded groove wheels suitable for cord or chain can be furnished if so ordered.

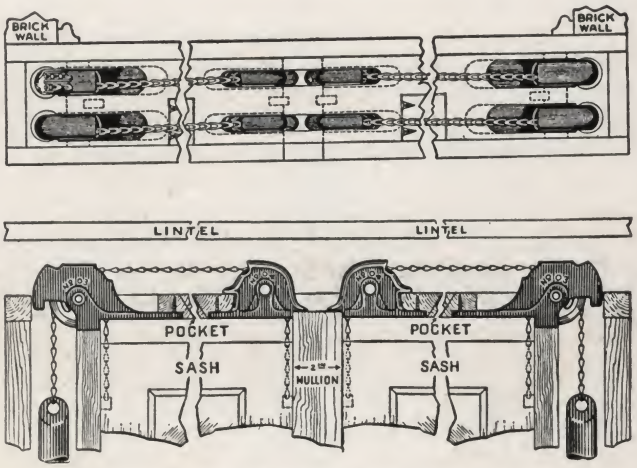
Axles—Cold rolled steel is standard. Brass or gunmetal axles can be furnished when so ordered.

Bearings—Furnished in either plain axle, roller or ball bearing; bronze, steel or noiseless wood bushing.

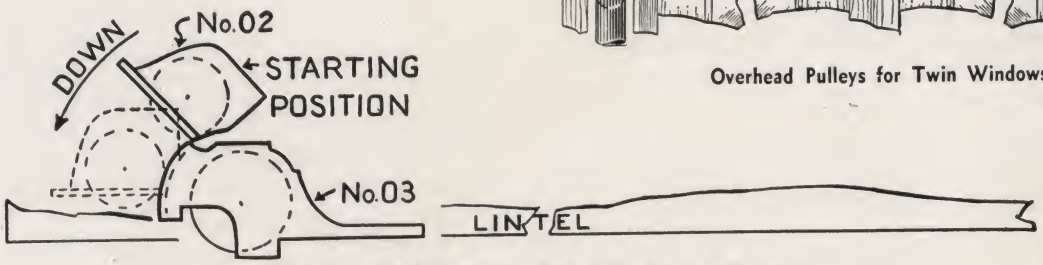
Faces—Cast iron. Cast or wrought bronze metal if so ordered, or electro-plated.



Overhead Pulleys for Single Windows

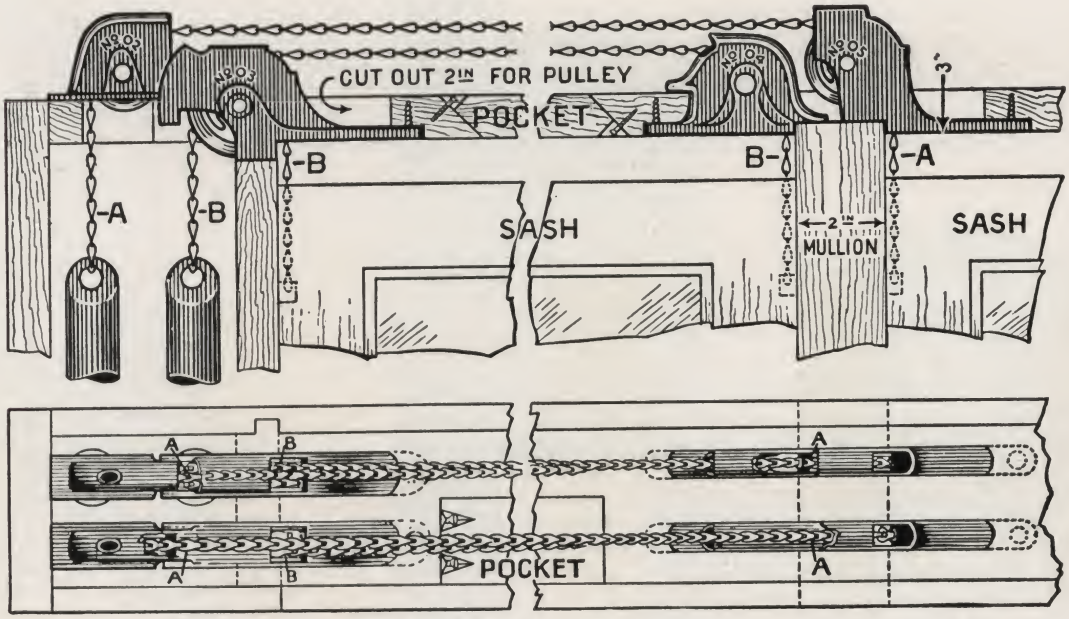


Overhead Pulleys for Twin Windows



Installation of Outer Pair of Pulleys for Triple Windows

Take pulley marked "02" and hook same to pulley marked "03," then take the assembly and set in place where they will automatically right themselves. "02" pulley will be held firmly in place with the sliding groove of "03"



Overhead Pulleys for Triple Windows

GRAND RAPIDS HARDWARE COMPANY

Manufacturers of All-steel Sash Pulleys

GRAND RAPIDS, MICH.

Offering the First 2¼-in. Ball Bearing Sash Pulley with Hooded Faceplate Covering the Wheel

This latest Pulley, No. 121, like all "Grand Rapids" Sash Pulleys, is absolutely jamproof. Construction throughout leaves no possibility for cord or chain to jump the wheel. We guarantee this pulley to carry any window.

Faceplate

The heavy double faceplate is 1⅛ by 5 in. The opening is just large enough to permit easy threading. Care has been taken to design the opening so that the cord cannot rub against the edge.

Bearing

A choice of ball or axle bearing is offered in the new No. 121 Pulley, the first time ball bearings have been provided with a "hooded" pulley larger than the 2-in. residential size.

The wheel of the ball bearing style has nine ¼-in. hardened steel balls running in a ⅝-in. ball race on a solid axle turned from open hearth steel bar. The ball bearing wheels are particularly recommended where an especially smooth and easy running wheel is required.

The wheel of the axle bearing type is fitted with a heavy solid sleeve turned from open hearth steel bar, and closely fits the long axle, ⅜-in. diam., made from the same material. Axles made from "Detroit" bronze can also be furnished in the axle bearing style.

Wheel

The full size 2¼-in. wheel is positively laced at eight points. The heaviest sash cord or chain cannot try the strength of its sturdy construction. The combination wheel groove permits the use of No. 12 cord or American No. 130 chain.

Housing

To avoid difficulty in threading with heavy cord or chain the rear of the wheel is left uncovered. The admission of air drafts or dust is absolutely controlled by the hooded face plate.

Finishes

A wide choice of finishes is offered in the following list. No. 121 (Plain Steel). No. 121-M (Mahogany). No. 121-C (Boston Bronze). No. 121-D (Solid Brass Faceplate). No. 121-E (Solid Bronze Faceplate). No. 121-F (All Solid Brass). No. 121-G (Brass Plated on Steel). No. 121-H (Bronze Plated on Steel). No. 121-I (Copper Oxidized on Steel). No. 121-J (Solid Brass Faceplate, Solid Brass Wheel). No. 121-K (Solid Bronze Faceplate, Solid Brass Wheel). No. 121-Gal. (Galvanized).

Add the letter B to any finish symbol to indicate ball bearing pulleys. For instance, No. 121-M indicates axle bearing mahogany pulleys, while No. 121-MB indicates ball bearing mahogany pulleys.

Residential Sizes

Standard 2-in. "Grand Rapids" "Hooded" Sash Pulleys are furnished in two faceplate sizes—No. 2 Ball Bearing and No. 102 Cone Bearing Pulleys have 1⅛x4½-in. faceplates; No. 3 Ball Bearing and No. 103 Cone Bearing Pulleys have 1x4½-in. faceplates.

Open Wheel Pulleys

When the older style open wheel pulleys are required for non-residential work "Grand Rapids" No. 21, 2¼-in. wheel, and No. 22, 2½-in. wheel, are the choice of all-steel pulleys. Finishes listed for the No. 121 Pulley are also furnished for the No. 21 and No. 22 Pulleys.

Samples, Quotations, Literature

Samples, quotations, and our complete catalogue will be gladly mailed at your request.



Cutaway View Showing Ball Bearings



No. 121 2¼-inch "Grand Rapids"



No. 21 and No. 22

GRANT PULLEY AND HARDWARE COMPANY

Sash Pulleys and Casement Window Hardware

TELEPHONE CONNECTION

33-36 Fifty-seventh Street
WOODSIDE, LONG ISLAND, N. Y.

CALIFORNIA REPRESENTATIVES, Grant Products & Hardware Co., 1221 West 11th Street, LOS ANGELES

Agents in all the principal cities of the United States and Canada, and our Name will be found listed in the Telephone Directories

Products

Manufacturers of SASH PULLEYS; ANTIFRICTION VERTICAL PIVOT LIFTS; TABOR REVERSIBLE WINDOW FIXTURES.

Also Antifriction Inward Opening Casement Window Hardware, Casement Window Adjusters, Sliding Window Hardware, Wood Rolling Partitions, Standard Safety Window Cleaning Devices.

For Ball Bearing and Antifriction Drawer Slides, see Manufacturers' Index.

For Door Hangers and Bar Locks, see page of Grant Elevator Equipment Corp. in Manufacturers' Index.

Selling Agents for

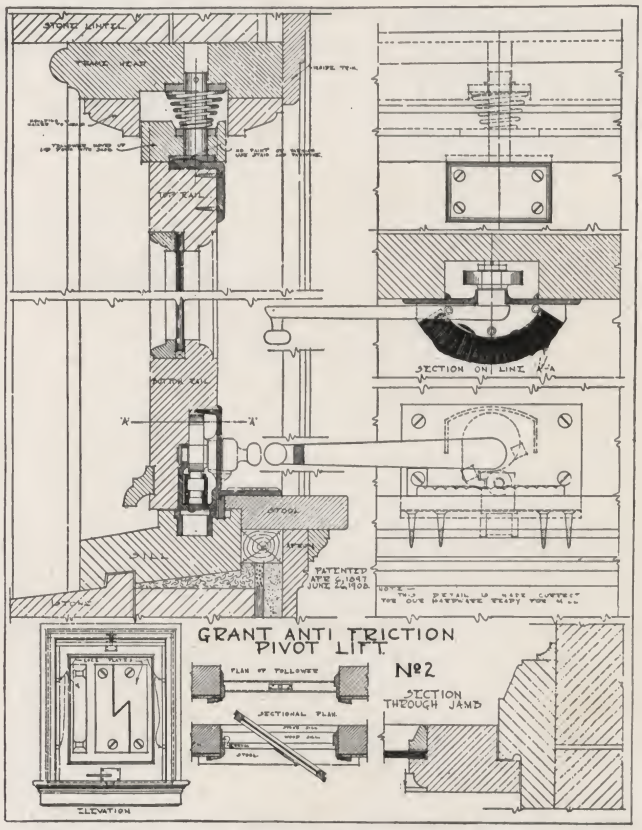
"Gem" Ball Bearing Door Hangers.

Details

Full size details of all our specialties will be sent on request.

"Grant" Antifriction Vertical Pivot Lifts

The "Grant" antifriction pivot lift, when applied to sash pivoted top and bottom, can be quickly and easily opened for ventilation.

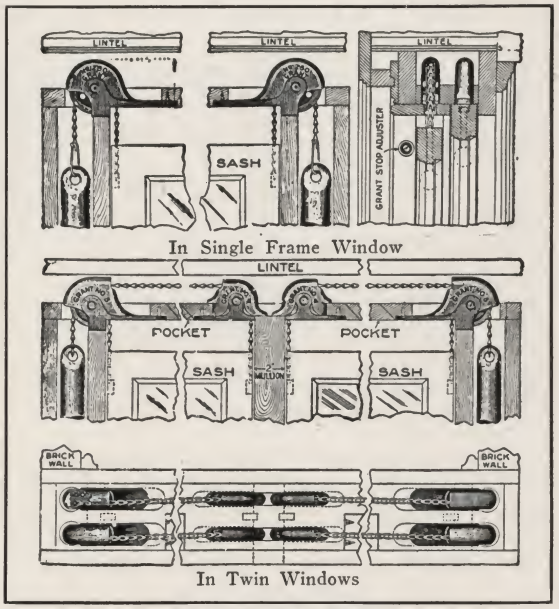


Details Pivot Windows Equipped with "Grant" Antifriction Lifts

"Grant" Overhead Pulleys

On account of additional pocket room gained by the use of "Grant" pulleys, iron instead of lead weights can be used for the heaviest plate glass windows, thus materially reducing cost. Frames are cut for "Grant" pulleys by a regular pulley machine.

"Grant" overhead pulleys are also made for triple, quadruple and quintuple windows.



Grant Overhead Pulley

Tabor Reversible Window Hardware

Tabor Reversible Hardware is made for double hung windows, weightless windows, transom bar windows and pivoted sash.

Style "A" equipment in illustration makes it possible to pivot an ordinary double hung window, thus giving 100% ventilation when needed; also eliminating the danger and use of window cleaning equipment. All cleaning is done from the inside of the building. Send for catalogue, full size details, specification data and prices.



Tabor Reversible Window Hardware

PULLMAN MFG. COMPANY, INC.

Manufacturers of Unit Sash Balances

ROCHESTER, N. Y.

Products

PULLMAN UNIT SASH BALANCES for wood, hollow metal, steel or kalamein double hung sash.

Also Special Balances: Tandem for extra heavy windows; Cabinet, for show and wall cases; pressed brass, for marine work; Midget Balance, instantly adaptable to the pulley mortises and sash grooving in standard stock frames and sash.

Finishes

All units have special rustproof finish. No additional protective coating is necessary. Finishes last indefinitely.

Brass, nickel, bronze, bower barff, verd antique or other architectural finishes can be readily obtained at a nominal additional cost. Special finishes should be clearly specified and sample of similarly finished hardware submitted if possible.

Types and Sizes

There are two types of Balances. Side pattern for standard use on jamb and Overhead or Top pattern for narrow mullions (see drawings on following page). Each pattern is made in three sizes, Units A, L and M, for the various weights of sash. Standard tape lengths are adequate for usual conditions. The longer tape of next size unit handles unusually long, narrow sash, i. e., use Unit L instead of A, or Unit M instead of L. (See table on following page.)

Note: *Two Pullman Balances are required for each sash.*

Principle of Construction

The Pullman Balance consists of a pressed steel casing enclosing a rustproof steel tape, wound on a revolving drum. Inside this drum is a spring of the finest clock steel, uniform in tension and temper.

Can be instantly installed or removed without disturbing stops, sash or frame by means of the loop in the end of the tape, which is hooked into the tape hook on the sash. All parts are fitted accurately, run smoothly and are almost noiseless. Non-breakable, light in weight, and all moving parts are entirely encased. Phantom cut above shows interior construction.

Pullman Sash Balances More Economical Than Weights and Cords

Expensive box frames, weights and cords are eliminated. Pockets for reaching weights are unnecessary—a big saving. Sash are grooved in one operation instead of two. Less lumber and labor required throughout. In some sections mill savings have been as high as $2.00 per frame. In any location, however, this saving should be at least 95¢.

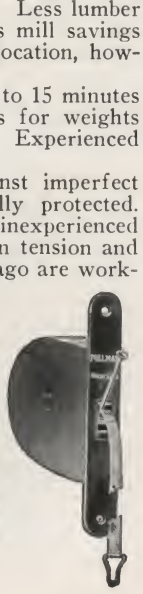
Pullman Balances are installed at the rate of 10 to 15 minutes per window as compared with 30 to 45 minutes for weights and cords, shown by time tests on actual jobs. Experienced carpenters can install in 6 to 10 minutes.

Guaranteed for the life of the building against imperfect workmanship or material. Purchasers are fully protected. They are not penalized for breakage due to inexperienced workmen. Durable, the spring remains uniform in tension and does not require oiling. Installations of 40 years ago are working satisfactorily. Tight construction. No leakage of air as with pulley opening. Saves fuel bills.

Substantial savings are effected in freight and cartage and in handling to and on the job. Labor costs reduced to a minimum. Tonnage reduced 90%.



Overhead Type, Fitted in Head of Frame



Side Type, Fitted in Jamb

An ordinary nail inserted in Balance holds spring while tape is being attached to tape hook on the sash

Unit Sash Balances
TRADE-MARK



How to Order

Specify exact weight by scales of each individual sash. The mill usually so marks the sash. Upper and lower sash often vary. Sash of the same dimensions likewise differ in weight. Therefore, never give weight of entire window. Be sure sufficient space is left for Balances. Use overhead type if no room in side jamb. Note the regular run of tape on following page for each size of Pullman Balance.

If additional run of tape (i. e., travel of sash within a given opening) or extra length is required in order to locate balances higher up or further away from the sash than usually, or for unusually long, narrow sash, please consult us before ordering.

Note: *The drawings and dimension schedules shown on following page must not be used for mortising purposes. Always send to us for templates (supplied gratis) before the mortising is done. The template is absolutely necessary for correct mortising.*

Illustrated Catalogue

Complete illustrated catalogue, "Standard Specifications and Architectural Details," may be had upon request.



Ten tons of weight replaced by one ton and ten men's work done by one man where Pullman Sash Balances are installed



Guaranteed for the Life of the Building

When each sash is accurately weighed and our instructions are followed for putting them in, we guarantee our standard Balances to carry the sash perfectly during the life of the building, and we will repair or replace at our factory, free of charge, any broken or imperfect Balances.

Specifications

Insert the following clause in the Millwork section of the specifications:

All double hung windows are to be operated by Unit Sash Balances as manufactured by the PULLMAN MFG. COMPANY, INC., Rochester, N. Y. The stiles of sash shall be grooved at the mill in accordance with the PULLMAN MFG. COMPANY'S details. All boxings and weight pockets for window weights shall be eliminated and frames provided as detailed.

Insert the following clause in the finish Carpentry specifications:

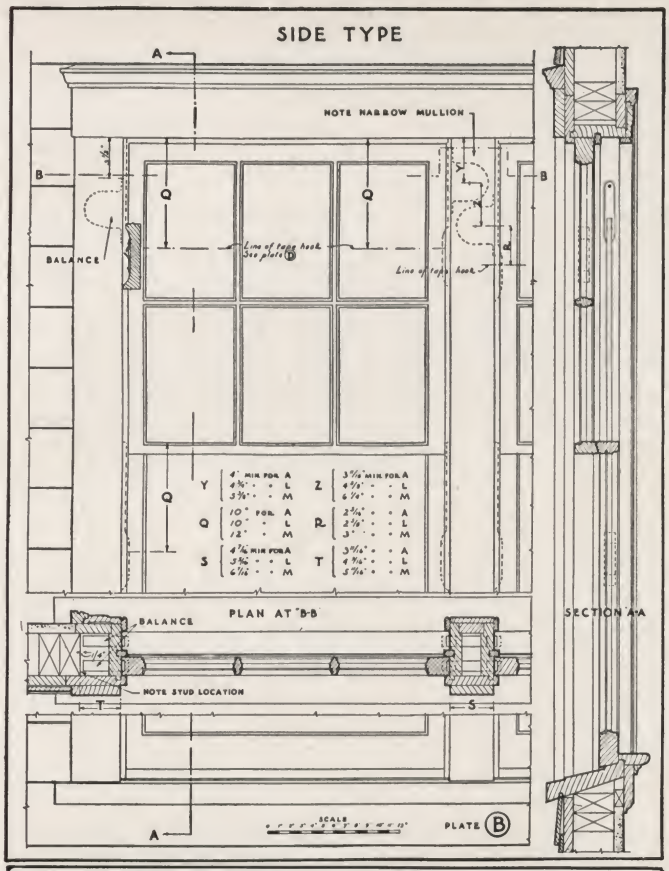
This contractor shall provide and install Unit Sash Balances as manufactured by the PULLMAN MFG. COMPANY, INC., Rochester, N. Y., on all double hung windows throughout.

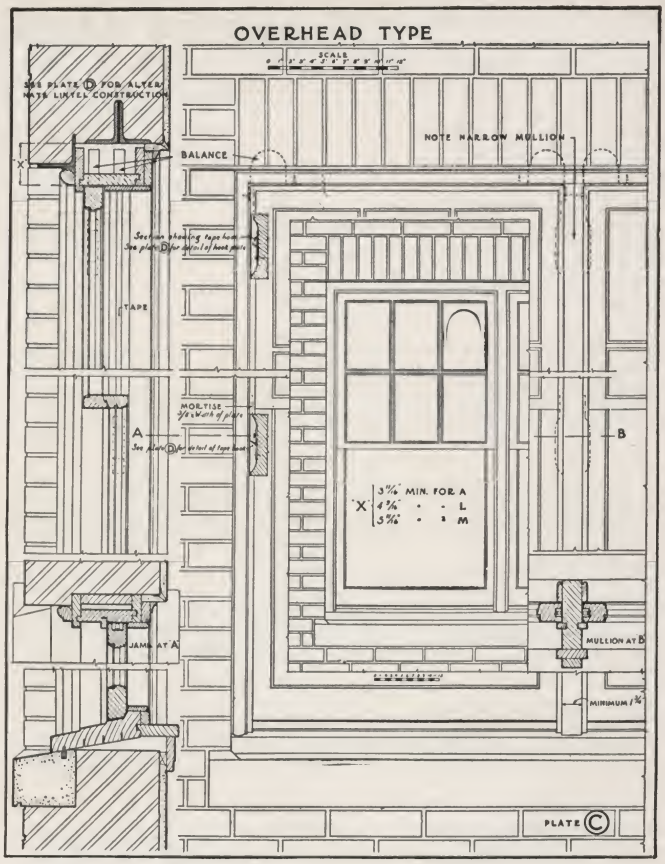
The manufacturer's standard metal housing shall be provided by this contractor to the mason where frames are surrounded by poured concrete.

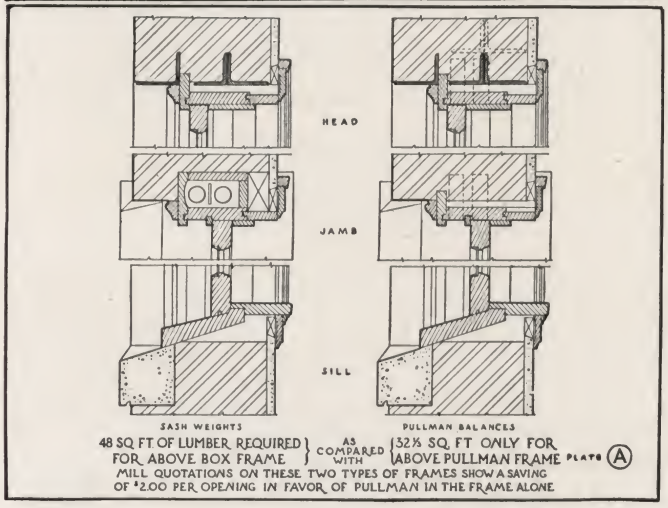
All Balances for windows throughout (state location) shall be Side Type and all Balances for windows throughout (state location) shall be Overhead Type.

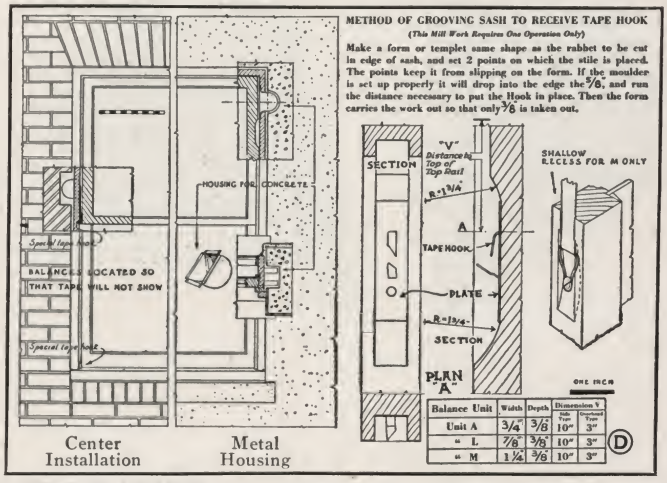
All sash shall be accurately weighed by scales as soon as completed, and the correct size and tension of Balances shall be provided for the sash of varying weights as required by the manufacturer's guarantee so as to balance the sash perfectly at all points.

All face plates shall have manufacturer's standard finish, except those for windows (state location), which shall be (state finish required).









PRICES, ETC., OF PULLMAN UNIT SASH BALANCES

Unit "A," for 4-lb. to 29-lb. Sash
Depth of Unit "A" Balance 3 1/16 in.
Face Plate—Width 1 in., length 6 in.

Balance No.	Weight each sash, pounds	Length tape, inches	Code word	Set of 4 Balances for 2 sash
2-A	4 to 5	46	Aback	$2.25
3-A	5 to 7	46	Abel	
4-A	7 to 9	46	Abhor	
5-A	9 to 11	46	Abide	
6-A	11 to 13	46	Abject	2.65
7-A	13 to 15	46	Abjure	
8-A	15 to 17	46	Abkari	
9-A	17 to 19	46	Ablaze	2.80
10-A	19 to 21	46	Ably	
11-A	21 to 23	46	Aboard	
12-A	23 to 25	46	Aboon	3.15
13-A	25 to 27	46	Abox	
14-A	27 to 29	46	Abrade	

Unit "L," for 10-lb. to 48-lb. Sash
Depth of Unit "L" Balance 4 3/8 in.
Face Plate—Width 1 3/8 in., length 7 1/8 in.

Balance No.	Weight each sash, pounds	Length tape, inches	Code word	Set of 4 Balances for 2 sash
3-L	10 to 11	54	Label	$3.65
4-L	12 to 13	54	Labor	
5-L	14 to 15	54	Lace	
6-L	16 to 17	54	Lack	
7-L	18 to 19	54	Lactic	4.05
8-L	20 to 21	54	Lacona	
9-L	22 to 23	54	Lacteal	
10-L	24 to 26	54	Laddie	
11-L	27 to 29	54	Lade	4.60
12-L	30 to 32	54	Lading	
13-L	33 to 35	54	Ladle	
14-L	36 to 38	54	Lady	
15-L	39 to 41	54	Lag	4.90
16-L	42 to 44	54	Laggard	
17-L	45 to 48	54	Lagging	

***Unit "M," for 24-lb. to 105-lb. Sash**
Depth of Unit "M" Balance 5 7/16 in.
Face Plate—Width 1 3/4 in., length 8 3/4 in.

Balance No.	Weight each sash, pounds	Length tape, inches	Code word	Set of 4 Balances for 2 sash
10-M	24 to 26	60	Mace	$ 7.35
11-M	27 to 29	60	Machine	
12-M	30 to 32	60	Mackerel	
13-M	33 to 35	60	Madam	
14-M	36 to 38	60	Madly	
15-M	39 to 41	60	Madonna	7.70
16-M	42 to 44	60	Magic	
17-M	45 to 48	60	Magnate	
19-M	49 to 52	60	Magnet	
21-M	53 to 56	60	Magnify	8.80
23-M	57 to 60	60	Magnolia	
25-M	61 to 64	60	Magpie	
27-M	65 to 68	60	Mahogany	
29-M	69 to 72	60	Maiden	10.20
31-M	73 to 76	60	Mail	
33-M	77 to 80	60	Maintain	
35-M	81 to 84	60	Majestic	
37-M	85 to 88	60	Major	11.20
39-M	89 to 92	60	Maker	
41-M	93 to 96	60	Malady	
43-M	97 to 100	60	Malice	11.90
45-M	101 to 105	60	Malign	

Overhead Type Balances are priced same as Side Type.
Side Type is always sent unless Overhead Type is specified.
For details of special finishes, see paragraph on preceding page.
**Tape hook* is not used with *Unit* "M."

CALDWELL MANUFACTURING CO.

Sash Balances and Door Holders

MAIN OFFICE AND FACTORY
56 Industrial Street, ROCHESTER, N. Y.

BRANCH OFFICES
CHICAGO, ILL., 155 No. Union Street
PHILADELPHIA, PA., 525 Commerce Street

Products

Manufacturers of CALDWELL SASH BALANCES; VERTICAL, JUNIOR and EMPIRE DOOR HOLDERS.
Also other Hardware Specialties.

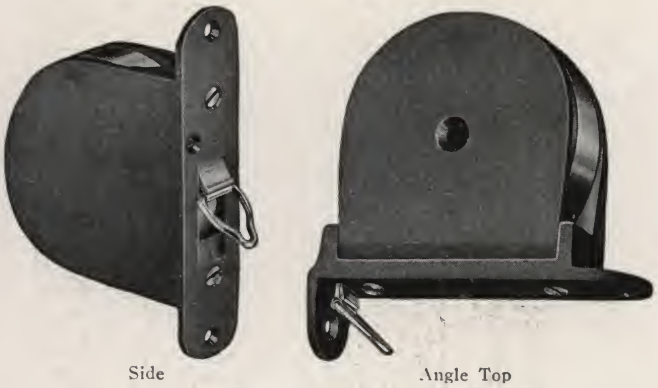
Caldwell Sash Balances

Have been made by us for the past 43 years. They are made of the best material, by workmen thoroughly experienced in the art of producing sash balances with uniform tension, insuring a perfect counterbalance at all points of the sash.

Top Balances—Enable the architect to make the narrowest possible mullion, allowing the use of narrow trim, giving the effect of casements in rows of double hung sash.

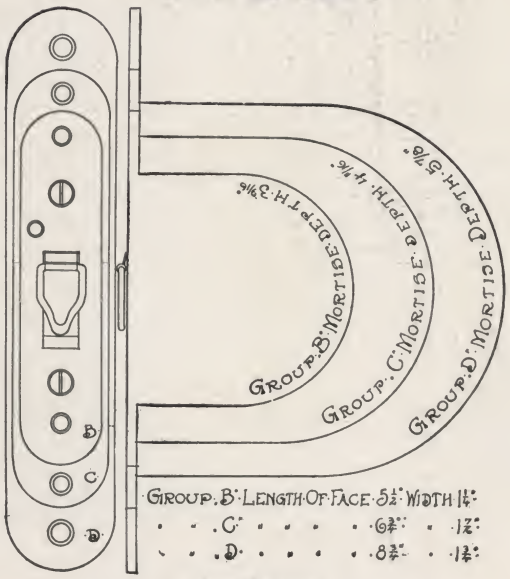
Uniform Mortises—Cut at the mill, reduce cost of installing.

Quality and Durability—Proved by years of satisfactory service.



Side Angle Top

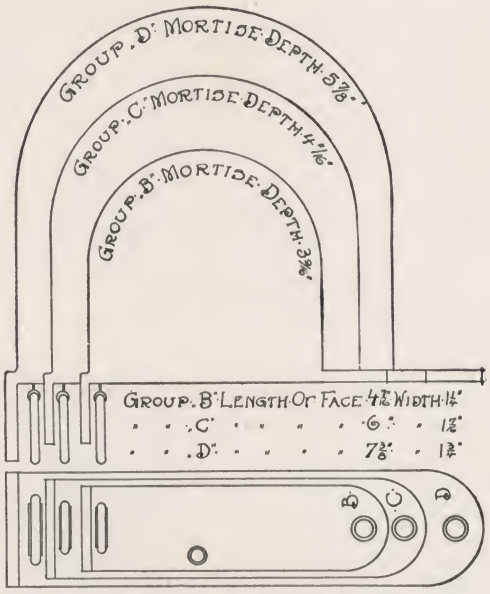
Caldwell Sash Balance



Side Balance
Measurements on outline are full size

Guarantee—Caldwell sash balances are guaranteed for 15 years.

Literature—Send for catalogue, "Suggestions for the Present Day Architect."



Top Balance for Mullion Windows
Measurements on outline are full size

Caldwell Vertical Door Holders

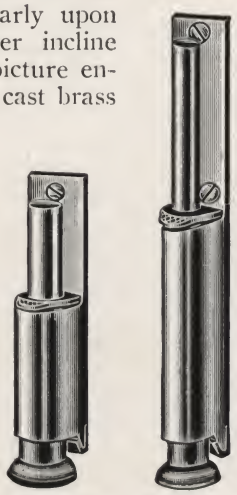
Of strongest construction; made in all finishes; have no screw ears.

A bracket affixes the holder immovably to the door, and gives strength at the base of holder where it is most required. Our *special large vertical door holder* with 4¼-in. drop is recommended for use on heavy outside doors, particularly upon vestibule doors, which open over incline floors, such as theaters, moving picture entrances, etc. Large size made in cast brass and bronze metal only.

Pressers are made of cold rolled rods, ⅝-in. diam. The rubbers are the *original cup shape,* reinforced with hard leather gaskets, which prevent the rubbers from being cut and torn.



Rubber for Caldwell Vertical Door Holders
(Full size)



Regular Size 1¼-in. Drop — Special size 4¼-in. Drop

Caldwell Vertical Door Holders

RUSSELL LINE SASH CHAIN AND ATTACHMENTS

THE JOHN M. RUSSELL MFG. CO. INC.

Oldest Manufacturers of Sash Chain Under the Same Name and Roof

NAUGATUCK, CONN.

SALES OFFICES AND DISTRIBUTORS

NEW YORK, N. Y., 42 Murray Street
PHILADELPHIA, PA., 521 Market Street
BOSTON (WATERTOWN), MASS., 20 Fitchburg Street
BALTIMORE, MD., 1706 No. Charles Street
CHICAGO, ILL., 1013 So. Halsted Street
ST. LOUIS, MO., 4th Street and Washington Avenue
MINNEAPOLIS, MINN., 207 3rd Street South
LOS ANGELES, CAL., 606 American Bank Building
PORTLAND, ORE., 325 E. 10th Street North

Copyright 1932 by The John M. Russell Mfg. Co., Inc.

RUSSELL BALANCED LINK STRENGTH SASH CHAIN FOR FLAT AND COMBINATION GROOVED PULLEYS

Balanced Link Strength

Breaking tests, made on sash chain of links fashioned from flat metal, reveal that such chain has broken at that end of each link which has the single thickness of metal long before the double thickness end was ready to break.



Single thickness end of link

Double thickness end of link



Russell Balanced Link Strength derived by increasing the amount of stock at the single thickness end



Customary width of links at the single thickness end. Not enough to balance or equal strength of double thickness end

Russell Sash Chain has avoided this weakness for years in the above illustrated way. Comparison will reveal that the links of Russell Sash Chain for flat and combination grooved pulleys are wider at the end having the single thickness.

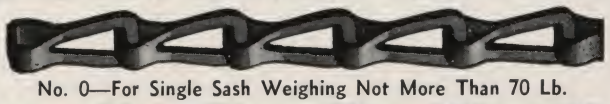
Grain-Stamped Links

Add to the feature of our *Balanced Strength* the fact that the links comprising Russell Sash Chain for flat and combination grooved pulleys are stamped out of the metal *with the grain of the metal,* and you have two major reasons why, in comparative tests, this chain, gauge for gauge, reveals a maximum in strength and resistance to wear.

Additional Features

1. Russell Steel Sash Chain is made from the best obtainable quality of new cold rolled strip steel.
2. Annually tested and approved by the National Board of Fire Underwriters.
3. Large stocks always on hand. Steel Chain can be furnished by us in all popular finishes: coppered, sherardized, hot galvanized, and coppered over hot galvanized.
4. Put up on strong all iron reels, 500 feet to the reel.
5. The tensile strength of our chain is easily determined by multiplying the above ratings under the illustrations, "For Single Sash Weighing not More Than —— Lbs." by four.

In other words, on this basis there is a factor of safety of 4 to 1 which is ample protection under all conditions.



No. 0—For Single Sash Weighing Not More Than 70 Lb.



No. 1—For Single Sash Weighing Not More Than 100 Lb.



No. 2—For Sash Weighing Not More Than 130 Lb.



No. 2A—For Sash Weighing Not More Than 175 Lb.



No. 3—For Sash Weighing Not More Than 200 Lb.

Bronze Sash Chain

Vulcan Bronze Sash Chain—Made in same sizes as the steel chain, of bronze mixture to give maximum service at minimum cost.

Acme Bronze Sash Chain—Also made in same sizes as steel chain, and is made of a special bronze mixture to give high tensile strength at least equal to that of steel chain.

Russell Sash Chain Record of Use

For over 30 years, Russell Sash Chain has been specified and installed in the windows of many large and well known buildings of all classes throughout the United States. Vulcan Bronze Sash Chain is extensively in use in the windows of many public buildings such as Federal Government Court Houses, Post Offices, Veteran's Hospitals, etc.

Round Cord Pulley Sash Chain



For safeguarding the home or apartment; in case of fire, sash will not drop. Longer lasting, quicker and easier to install than cord.

Lengths—Put up 500 ft. to the reel and 100 ft. to the bag with No. 78 attachments.

Finish—Steel coppered, sherardized and hot galvanized.

Tensile Strength—Multiply ratings below by six (6). Made narrow to run freely and smoothly in small pulleys.



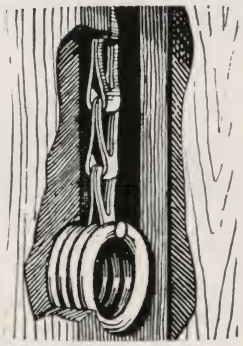
No. 7—For Single Sash Weighing Not More Than 26 Lb.



No. 8—For Sash Weighing Not More Than 38 Lb.

Sash and Weight Attachments





No. 78 Weight Hook and Sash Spiral

For No. 7 and No. 8 Sash Chain for light sash

No. 2 Weight Hook and Sash Spiral

Same style as No. 78, but larger and heavier. For Nos. 0, 1 and 2 sash chain



No. 3 Three-piece Fixture for Heavy Sash

SAMSON CORDAGE WORKS

89 Broad Street
BOSTON, MASS.

Products

Manufacturers of BRAIDED COTTON CORD in all sizes and colors for all purposes, including SAMSON SPOT CORD, SAMSON WIRE CENTER CORD and other SASH CORDS.

Also manufacturers of Clothes Line, Ventilator Cord, Curtain and Shade Cord, Awning Line, Masons' Line, Dumbwaiter Rope, Arc Lamp and Trolley Cord, Signal Cord, Cotton Twine, etc.



TRADE-MARK

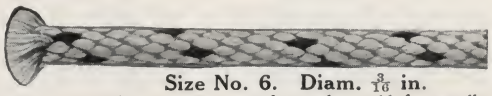
Samson Cord

All cord bearing the trade-mark of Samson and the Lion is made of extra quality stock; is carefully inspected, and is guaranteed free from the rough places which destroy common cords so quickly.

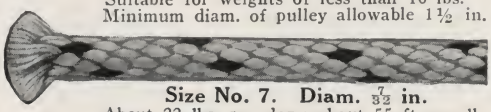
The SAMSON CORDAGE WORKS manufactures several grades of sash cord, but the lower grades, made for competing trade in cheap work, do not bear the Samson trade-mark. They do not fill specifications for Samson cord, which is much more economical in the end.

Samson Spot Sash Cord

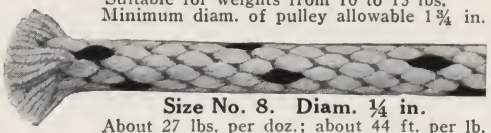
The number indicates the diameter in 32nds of an inch. Usually put up in 100 ft. hanks, 1 dozen hanks in a package.



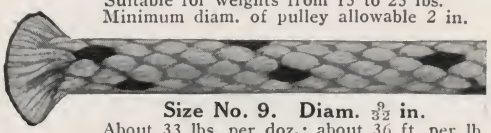
Size No. 6. Diam. $\frac{3}{16}$ in.
About 18 lbs. per doz.; about 66 ft. per lb.
Suitable for weights of less than 10 lbs.
Minimum diam. of pulley allowable 1½ in.



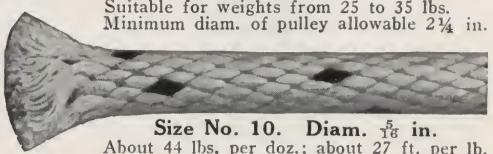
Size No. 7. Diam. $\frac{7}{32}$ in.
About 22 lbs. per doz.; about 55 ft. per lb.
Suitable for weights from 10 to 15 lbs.
Minimum diam. of pulley allowable 1¾ in.



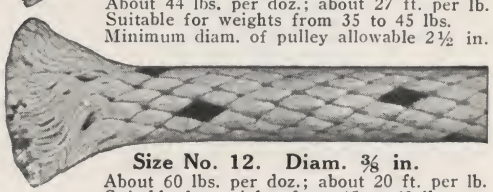
Size No. 8. Diam. ¼ in.
About 27 lbs. per doz.; about 44 ft. per lb.
Suitable for weights from 15 to 25 lbs.
Minimum diam. of pulley allowable 2 in.



Size No. 9. Diam. $\frac{9}{32}$ in.
About 33 lbs. per doz.; about 36 ft. per lb.
Suitable for weights from 25 to 35 lbs.
Minimum diam. of pulley allowable 2¼ in.



Size No. 10. Diam. $\frac{5}{16}$ in.
About 44 lbs. per doz.; about 27 ft. per lb.
Suitable for weights from 35 to 45 lbs.
Minimum diam. of pulley allowable 2½ in.



Size No. 12. Diam. ⅜ in.
About 60 lbs. per doz.; about 20 ft. per lb.
Suitable for weights from 45 to 60 lbs.
Minimum diam. of pulley allowable 3 in.

Samson Spot Sash Cord

Samson Spot Cord is made in one quality only, the best sash cord we can produce after nearly fifty years' experience. The colored spots are our trade-mark, used only with this extra quality. They serve as a means of identification after the label is removed.

Spot Cord will wear many times longer than common cord, made of inferior yarn roughly braided and poorly finished, causing early destruction by abrasion on the pulley.

Specifications—Architects' specifications should read:

"Windows to be hung with Samson Spot Cord; size of cord and size of pulleys to agree with manufacturer's list." (See lower left-hand corner of this page.)

Sample Cards—Sample cards, showing proper sizes for use with different weights and pulleys, will be gladly sent to architects and builders.

Samson Wire Center Sash Cord

Recommended for use in hanging heavy windows or where for any reason a metallic device is desired.

The cover is made of the same extra quality cotton yarn as used in Samson Spot Cord, with special steel wire center, manufactured under specifications for running over pulleys and of entirely different quality from ordinary wire.

The weight of the window is borne chiefly by the wire center, the cotton cover merely acting as a cushion, thus avoiding contact of metal with metal which causes wear and makes an unpleasant noise.

It is carried in mahogany color in two sizes: Nos. 8 and 10.

No. 8 is suitable for weights up to 30 lbs. if used with pulleys not less than 2 in. in diameter, or for weights up to 50 lbs. with pulleys not less than 2½ in. in diameter.

No. 10 for weights up to 75 lbs. if used with pulleys not less than 2½ in. in diameter, or for weights up to 100 lbs. with pulleys not less than 3 in. in diameter.



Samson Wire Center Sash Cord

Special Cords

Cords made to order for any purpose, in special braid, finish or color.

Territory

Samson Spot Cord and this company's other goods are sold all over the world, and are carried by dealers in all parts of the United States.

Catalogues

Send for catalogues and sample cards.

SILVER LAKE COMPANY

Manufacturers of Sash, Bell and Signal Cord

NEWTONVILLE, MASS.

FACTORIES, CHATTAHOOCHEE, GA.

BRANCH OFFICES

NEW YORK, N. Y., 76 Reade Street
PHILADELPHIA, PA., 508 Market Street
CHICAGO, ILL., 222 West Kinzie Street
HOUSTON, TEX., 2409 Commerce Avenue
LOS ANGELES, CAL., 606 American Bank Building
SAN FRANCISCO, CAL., 604 Mission Street
SEATTLE, WASH., 505 Maritime Building
NASHVILLE, TENN.

Products

Manufacturers of "Silver Lake" Solid Braided Window Sash Cord.

Also Railroad Bell, Trolley, Signal, Curtain and Shade Cord; Arc Lamp, Dumbwaiter and Transmission Rope; Mason's Lines and Clothes Lines, and all kinds of Solid Braided Cordage.

Description of Solid Braided Cordage

We are the pioneer manufacturers of solid braided cordage. "Silver Lake" cords have been used for the best work since 1868 and have become known as the standard. "Silver Lake" solid braided sash cord is made of the best quality of selected cotton yarn; twice doubled and twisted, and then braided on solid braiding machines of our own design.

Advantages—"Silver Lake" cord costs less per pound than linen and other fine fibers, and its weight is so much less that it costs less per foot than cords that are cheaper per pound. Cotton is the only fiber that will stand constant bending over a pulley; consequently a cotton cord is more durable than one made of linen or hemp. It varies in diameter by thirty-seconds of an inch, and is adapted to all styles and sizes of weights and pulleys. Our process of finishing takes up all the stretch, so that "Silver Lake" cords do not lengthen as they wear, but maintain the weight at its original height.

Ordinary twisted cords kink badly in unwinding from the hank, and a great deal of time is required to straighten them out. "Silver Lake" braided cord comes out smoothly and makes it possible to hang more sash in a given time than when ordinary cords are used. "Silver Lake" cord is smooth in finish and can not work in between pulley wheel and case, a fact that precludes all possibility of broken sash cords. Our shade cords are extremely handsome in appearance and do not fray and break.

Guarantee—Furthermore, we issue a certificate of guarantee protecting every architect who specifies "Silver Lake" sash cord against the breakage of same for a period of 20 years after installation.

Special Cords

All colors of wire center cord and a great variety of other braided cords for special purposes manufactured to order. Estimates promptly furnished on any sample sent to us. Anything in the way of a solid braided cord, in any color or design, may be had.

Sizes, Weights, etc.

The table gives the sizes and weights of cords, and the weight which each size will safely carry.

Territory

Our cords are in use the world over, and are carried by dealers throughout the United States.

Orders of any size promptly filled.

Trade-marks

All hanks of genuine "Silver Lake" cord are bound with our label, bearing our trade-mark. As an additional protection and means of identification, every foot of cord is stamped with our name. Cord not so marked is not genuine "Silver Lake."



Reproduction of "Silver Lake" Cord with Trade-mark and Name

SIZES, WEIGHTS, LENGTHS, ETC., OF "SILVER LAKE" CORD

Size No.	Diameter, in.	Weight per dozen hanks, lb.	Feet per pound, approximate	Minimum diameter, of pulley allowable, in.	Suitable for weights, lb.
6	3/16	18	66	1 1/2	up to 10
7	7/32	22	52	1 3/4	10 to 15
8	1/4	27	44	2	15 to 25
9	9/32	33	36	2 1/4	25 to 35
10	5/16	44	27	2 1/2	35 to 45
12	3/8	60	20	3	45 and up

Prices on application.

THE TURNER & SEYMOUR MFG. CO.

(SMITH & EGGE DIVISION)

Manufacturers of Chain

TORRINGTON, CONN.

REPRESENTATIVES

CHICAGO, ILL., H. C. Stewart, 40 So. Clinton Street
CLEVELAND, OHIO, Gesing Bros., 1037 Terminal Tower
DALLAS, TEX., J. H. North, 1002 Woodlawn Avenue
NEW YORK, N. Y., Nepperhan Sales Co., Inc., 55 W. 42nd Street
PHILADELPHIA, PA., K. G. Kredell, 527 Commerce Street
SAN FRANCISCO, CAL., R. R. Vought Co., 518 Monadnock Building

Products

SASH CHAIN and FIXTURES; CABLE CHAIN.

Sash Chain and Fixtures

Steel Sash Chain—Seven sizes. Made of the best cold rolled steel, which gives it the finest appearance, great strength and wearing qualities.

This chain can be furnished in plain steel or coppered, sherardized, galvanized, or copper plated over sherardized (Sher-el-copp) as desired.



Steel Sash Chain—No. 1, Actual Size

Size	Gauge, in.	For sash weighing, lb.
A	.054	400
A30	.049	300
1	.045	250
2	.036	150
0	.028	100
00	.035	100
35	.035	100



No. 00 Steel Sash Chain, Actual Size



No. 35 Steel Sash Chain, Actual Size

Chains for Light Weight Sash—Nos. 00, 000 and 35 sash chains are made in steel, "Red Metal," and brass and, while primarily designed for light weight windows, are also adapted for many other purposes where a strain of 100 lbs. or less is required.

Steel chains can be furnished in any finish desired.

The steel chains are put up in bags containing 100 ft. each, and seven sets of fixtures (consisting of 28 No. 00 hooks and 28 No. 44-3 spirals) for attaching chain to weight and sash.

Four hooks and four spirals are required for a window of two sashes. Attached as shown.



Method of Attaching Chain to Weight



Method of Attaching Chain to Sash with Spiral

"Red Metal" Sash Chain—Seven sizes. Composed of a special solid bronze mixture. This is a universally accepted bronze sash chain used in modern construction.

"Red Metal"
REGISTERED TRADE-MARK



"Red Metal" Sash Chain—No. A, Actual Size

Size	Gauge, in.	For sash weighing, lb.
A	.054	300
A30	.049	250
1	.045	225
2	.036	150
0	.028	100
00	.035	80
35	.035	80

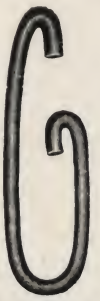
Giant Metal Sash Chain—Six sizes. This chain is made from a special bronze mixture controlled by us. We believe that no chain on the market can be considered its equal. Many times those buying bronze chain in the belief that they are getting the equal of our "Giant Metal" are actually supplied with chain similar to our "Red Metal."



Giant Metal Sash Chain—No. 2, Actual Size

Size	Gauge, in.	For sash weighing, lb.	Size	Gauge, in.	For sash weighing, lb.
XXX	.072	...	1	.045	275
A	.054	400	2	.036	175
A30	.049	325	0	.028	125

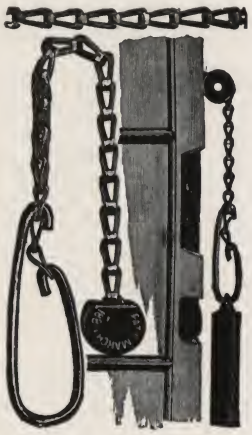
Fixtures—Various types, easily attached. Nos. 1, 22, 33 and 44 fixtures are for our regular sash chains.



No. 1 Hook
4 ins. long



Nos. 33 and 44 Fixtures
No. 33 fixture for ⅞-in. hole in sash
No. 44 fixture for ¾-in. hole in sash



Correct Method of Attaching No. 1 Sash Fixtures

Cable Chain

Various sizes. Made in both copper and steel, these chains are especially recommended for use where a heavy weight is required, and are especially adapted for use on elevator or fire doors, safety gates, etc. Tensile strengths vary according to size of chain.



Cable Chain

Catalogues and Specification Sheets

Our latest catalogues or samples of chains will be mailed on request.

A. B. WINDOW SAFETY DEVICES, INC.

20 Vesey Street, NEW YORK, N. Y.
REPRESENTATIVES IN PRINCIPAL CITIES

TELEPHONE
BArclay 7-2967

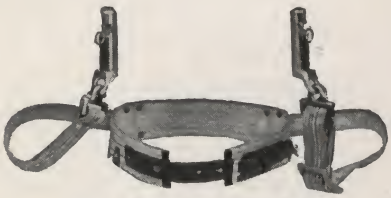


No. 3 Two-bolt Leather Belt
Also furnished in canvas and web

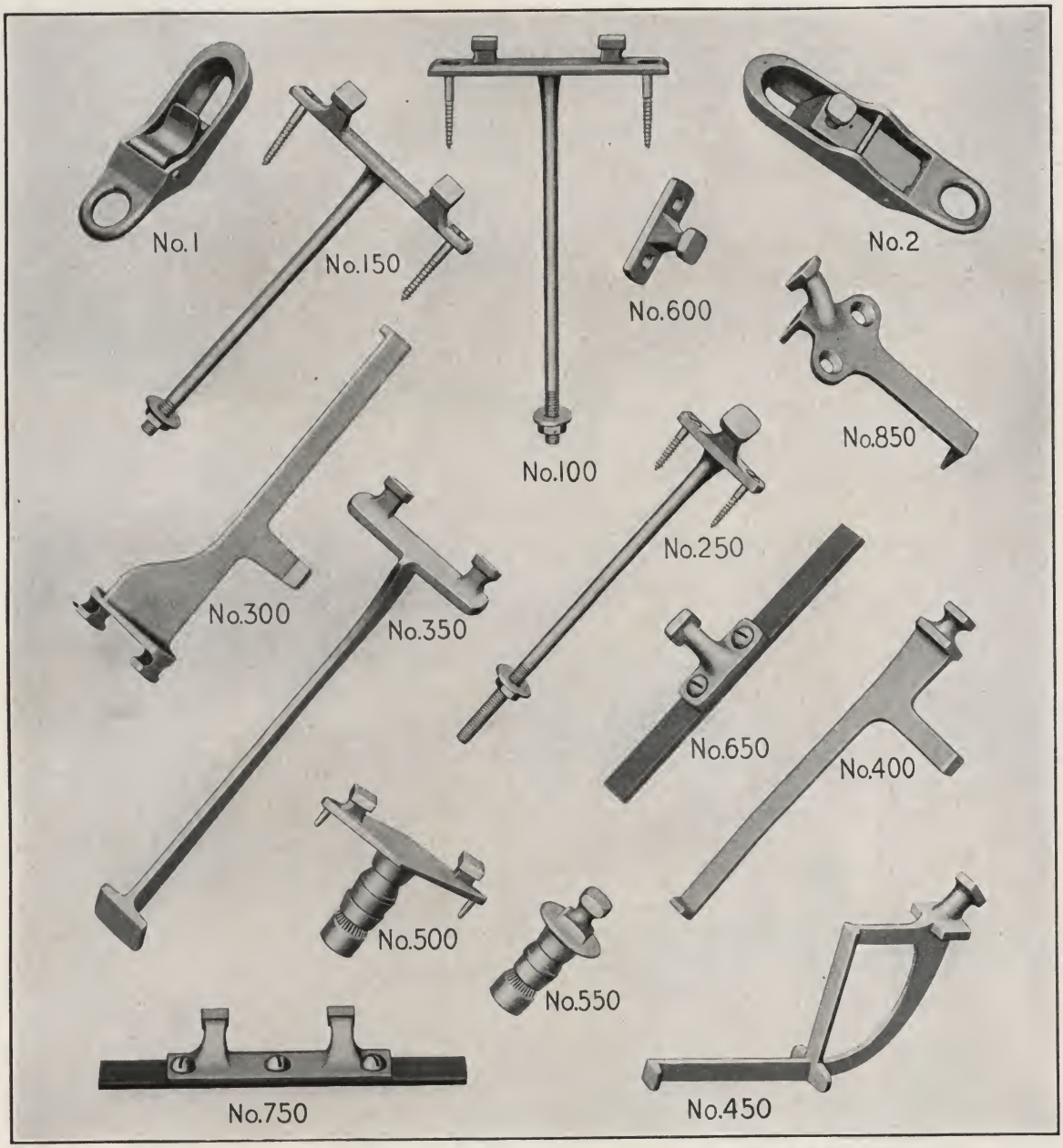
For All Types of Windows or Construction

A. B. Window Safety Devices are made in two-bolt and four-bolt systems. They are correctly designed and easily installed. Unobtrusive in appearance, yet their sturdy construction provides maximum safety to the window cleaner.

The A. B. line of Window Safety Devices includes a fitting for every type of window or construction—blueprints of installation details will gladly be furnished on request.



No. 4 Four-bolt Web Belt
Also furnished in canvas and leather



No. 1 Two-bolt Belt Terminal

No. 2 Four-bolt Belt Terminal

For Wood or Kalamein Frames

No. 100 Four-bolt Straight Set Rod Bolt
No. 150 Four-bolt Offset Rod Bolt
No. 200 Two-bolt Straight Set Rod Bolt (not shown)
No. 250 Two-bolt Offset Rod Bolt
No. 850 Two-bolt Offset Wing Bolt

For Steel and Hollow Metal Frames

No. 600 Two-bolt Straight Set Fitting
No. 650 Two-bolt Offset Fitting (shown with reinforcing plate)
No. 700 Four-bolt Straight Set Fitting (not shown)
No. 750 Four-bolt Offset Fitting (shown with reinforcing plate)

For Masonry Walls

No. 300 Four-bolt Straight Set Anchor*
No. 400 Two-bolt Straight Set Anchor*
*For masonry jambs or brick reveals.
No. 350 Four-bolt Offset Anchor**
No. 450 Two-bolt Offset Anchor**
**For brick, stone or terra cotta.
No. 500 Four-bolt Expansion Bolt†
No. 550 Two-bolt Expansion Bolt†
†For stone or brick. Cinch System of expansion used.

A. B. Window Safety Devices are made of cast bronze or drop-forged metal. Cast bronze furnished unless otherwise specified

ACKERMAN, INC.

Standard and Approved Window Cleaner's Safety Devices and Equipment
Brass, Bronze and Monel Metal, Drop Forged or Cast

TELEPHONE
MURray Hill 4-3812

48 West 27th Street
NEW YORK, N. Y.

Adaptability

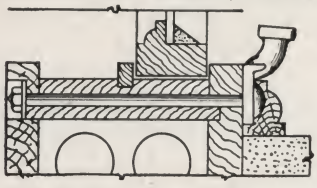
All single head types shown are made with double heads for four-bolt system, and vice versa.

Architect's Specifications

All windows, which are to be cleaned from the outside, and which are 6 ft. or more above grade, roof, balcony or fire escape, shall be equipped with Ackerman Window Cleaner's Devices, as manufactured by ACKERMAN, INC., New York, N. Y.
Install two (2) to each window, 46 to 51 ins. above sill.
Select the type from illustrations to suit type of construction.
Our devices are listed by Underwriters' Laboratories, Inc.

Recent Installations

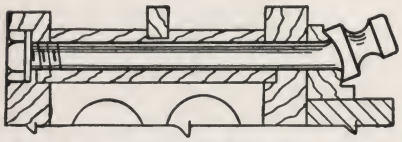
NEW YORK—Court Square Building; Public Schools; American-Pacific Bank; Bank of Canada Building; Fifth National Bank; General Motors Building; United Cigar Stores Co. Building; Fire Department Buildings; Loft Candy Buildings.
HARTFORD—Ætna Life Insurance Building.
PHILADELPHIA—Warwick Hotel.
NEW BRUNSWICK—Johnson & Johnson Buildings.
JOHNSTOWN—Garfield Junior High School.
PATERSON—Paterson General Hospital.
NEWARK—Military Park Building; Presbyterian Hospital.
ELIZABETH—St. Elizabeth's Hospital.
PITTSBURGH—Lauer-Magee Hospital.
ATLANTA—Rhodes Haverty Building.
WASHINGTON, D. C.—Agricultural Building



No. 2E—For Wood or Kalamein Frames and Mullions
Installed at mill by frame-maker or at job by carpenter contractor



No. 2D Double Head or 4-bolt system type

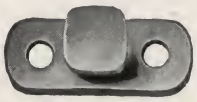


No. 2A—For Wood or Kalamein Frame and Mullions
Undersurface of shoulder is made concave, flat or convex to match staff bead or pilaster. Pat., Nov. 23, 1927

Through Bolt Devices
Types No. 2E, No. 2A, No. 2D



Fig. 14. Four-bolt System Anchor
Specification same as No. 7

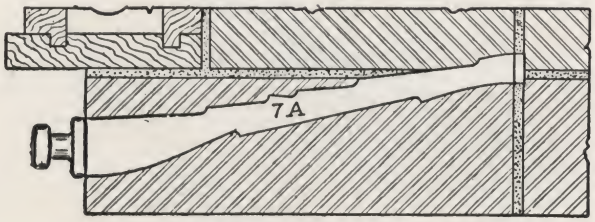


No. 10. Mullion Device

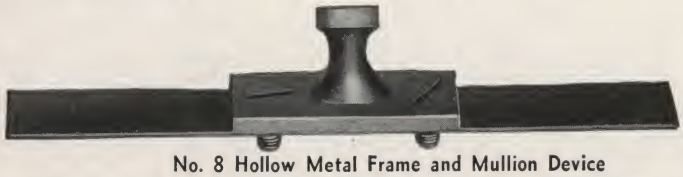


No. 11. Jamb Device

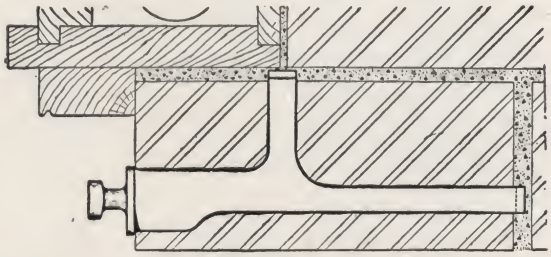
For solid steel sash of the Fenestra, Truscon, William Bailey and similar type windows, holes drilled on 1⅝-in. centers, or other dimensions to suit sash manufacturer



No. 7A. Brick Anchor
For masonry jambs installed by mason contractor
Also made with double head for four-bolt system



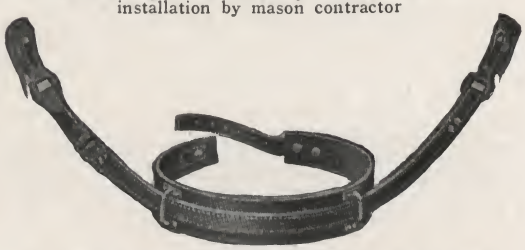
No. 8 Hollow Metal Frame and Mullion Device
Reinforcing plates are attached by frame-maker during fabrication of frames



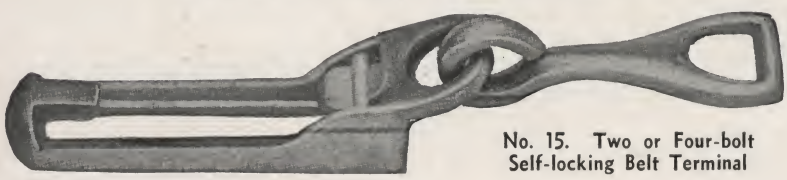
No. 7 Brick Anchor
For installing in the masonry during construction installation by mason contractor



No. 12. Hollow Metal Frame Device, Four-bolt System
Made to conform to contour of all window frames



No. 19. Ackerman Window Cleaner's Safety Belt
Made of canvas or leather



No. 15. Two or Four-bolt Self-locking Belt Terminal

HARRISON-WEISE COMPANY

Manufacturers of 4-Bolt Security Safety Anchors for Window Washers

228 N. LaSalle Street, CHICAGO, ILL.

H-W 4-BOLT SECURITY SAFETY ANCHORS

Absolutely Eliminate the Possibility of Breakage of the Anchor

The 4-Bolt Anchor was developed to assure absolute safety to the window washer who has to trust his life to the anchors. They are the only 4-Bolt Anchors for Window Washer Safety Devices that we know of, and are manufactured exclusively by the HARRISON-WEISE COMPANY. Their many advantages over the original two-headed cast iron, cast brass or cast bronze, as well as the two-headed forging or malleable anchors attached to the frame by a single bolt, has been recognized by leading architects.

Some of the advantages are:

Two Bolts to Each Anchor—This gives many times the strength of anchors fastened by only one bolt because in using the H-W 4-Bolt Anchors, the window washers terminals are hooked and pull directly on the bolts.

Made of Non-corrosive Materials—Bolts, plates, spring lockwashers and nuts are all made of cold rolled U.S. Naval Bronze, proof against corrosion and exceptionally strong. The H-W 4-Bolt Anchor will last as long as the building—first cost is the only cost.

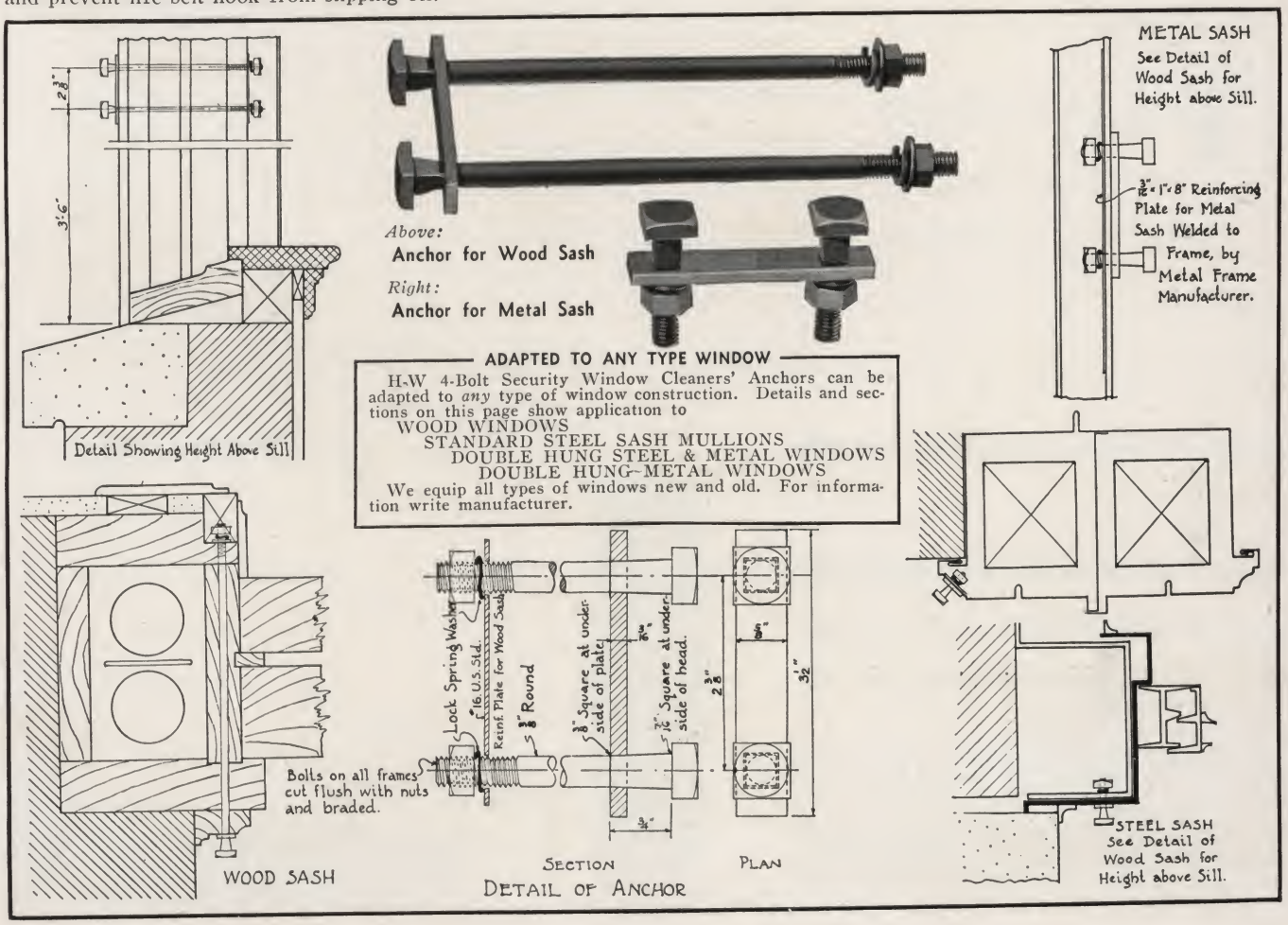
Cannot Become Loose—Cannot pull out as each bolt is securely held in place by lockwasher, nut and braided bolt *behind* the window frame.

Cannot Turn and Unhook Belt—Each anchor is firmly held in place by *two* bolts which prevent turning of anchor. Individual bolts have square shank seating in square hole, making turning impossible.

Positive Attachment for Terminal Hook of Life Belt—Because H-W Security Anchor Bolts have a square head which overhangs, the terminal hook springs make positive contact and prevent life-belt hook from slipping off.

A Few Installations

JOB	LOCATION	ARCHITECT
Mississippi Hotel and Theatre Building	Davenport, Ia.	A. S. Graven
Lambda Chi Alpha Fraternity House	Evanston, Ill.	Granger & Bollenbacher
University Club	Chicago, Ill.	Holabird & Root
Chicago Historical Building	Chicago, Ill.	Graham, Anderson, Probst & White
Emmerson High School	Chicago Suburb	Van Gutten & Van Gutten
Maywood School	Chicago Suburb	Van Gutten & Van Gutten
Leiter Building (Sears, Roebuck & Co.)	Chicago, Ill.	Mundy & Jensen
Y. W. C. A. Building	Chicago, Ill.	Robt. De Golyer
Illinois Bell Telephone Building	Winnetka, Ill.	Holabird & Root
Provident Hospital	Chicago, Ill.	Schmidt, Garden & Erickson
Forest Products Laboratory	Madison, Wis.	Holabird & Root
Illinois Bell Telephone Co.	Chicago, Ill.	Holabird & Root
Sears, Roebuck & Co.	Union City, Pa.	Nimmons, Carr & Wright
Sears, Roebuck & Co.	Hackensack, N. J.	Alfred S. Alschuler



THE IMPERIAL BRASS MFG. CO.

Window Washing Devices, Safety Belts and Building Hardware

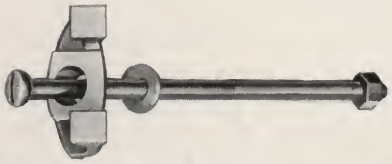
1222 West Harrison Street, CHICAGO, ILL.

Products

DOUBLE SAFETY EXTRA HEAVY WINDOW WASHING DEVICES; SAFETY BELTS; PUSH and PULL BARS and PLATES; THRESHOLDS; KICK PLATES and NAME PLATES.

Also manufacturers of Brass and Bronze Railings; Special Builders' Hardware; Outdoor Signs, etc.

For Watrous Flush Valves and Liquid Soap Fixtures, see Manufacturers' Index.



No. H-411-F Universal Safety Device

This new Imperial Universal Brass Forged Window Cleaners Safety Device is adaptable to all types and sizes of wooden window frames.

By the specially designed ball and socket joint the head of the device automatically seats itself on any type of brick moulding up to an angle of 45 degrees, yet fits the straight trim on center mullions just as well.

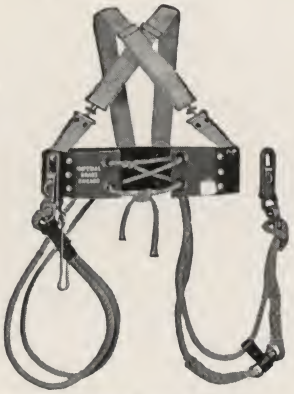
This device eliminates cutting out mouldings, mutilating window frames and bending bolts



No. H-420-F

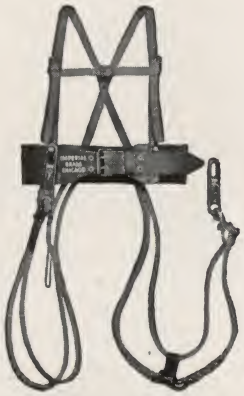


Nos. H-406-F and H-406



No. H-425 with Shoulder Straps

No. H-426 without shoulder straps



No. H-427 with Shoulder Straps

No. H-428 without shoulder straps



Nos. H-401-F and H-401 Safety Device

The angle of inclination and height of head make it universal for all types of belt terminals, all positions on the window jambs and for new and old buildings. Brass wedges can be furnished with angles of 15°, 30° and 45°.



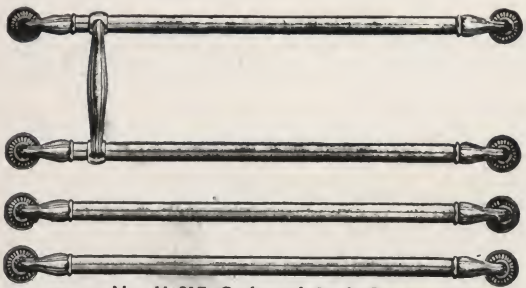
No. H-400 Safety Device

Specifications for Window Washing Devices

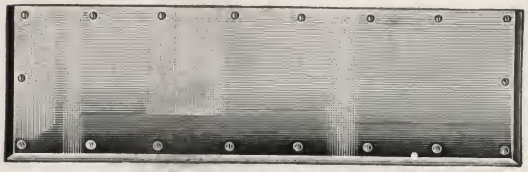
Furnish and install Imperial Extra Heavy Double Safety Devices manufactured by THE IMPERIAL BRASS MFG. CO. of Chicago, Ill.

Install Nos. ....., one on each side of window with anchor heads in vertical position, placed at a height of 45 to 50 in. above sill.

Device No.	Type for	Furnished and installed by	Material	General
H-401-F	Wood jambs or mullions	Carpenter contractor	Brass forging	Bolt ⅜-in. in diam. Furnished in 8½ and 10½-in. lengths.
H-401	Wood jambs or mullions	Carpenter contractor	Manganese bronze casting	Same as H-401-F.
H-400	Brick, concrete and stone wall	Mason contractor	Manganese bronze casting	Furnished in extra heavy type.
H-406-F	Hollow metal jambs	Metal window contractor	Brass forging	3 holes 2⅛-in. centers use 5/16-18 round head machine screws and reinforcing plate.
H-406	Hollow metal jambs	Metal window contractor	Manganese bronze casting	Same as H-406-F, except in manganese bronze casting.
H-408	Steel frames	Metal window contractor	Manganese bronze casting	2 holes 11/32-in. diam., 2⅛-in. centers. Use 5/16-18 round head machine screws.
H-411-F	Wood jambs or mullions	Carpenter contractor	Brass forging	Adaptable to all angles and shapes of wood jambs and mullions.
H-425 and H-426	Safety belt	Contractor	Extra strong webbing, reinforced with leather 3½-in. wide, brass forged rope eyes, and terminals	Terminals fit single and double head anchors.
H-427 and H-428	Safety belt	Contractor	All leather (oak-tanned) brass forged rope eyes, terminals, and buckle	Terminals fit single and double head anchors. Has metal grommets and double tongue buckle.



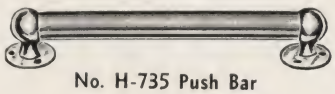
No. H-815 Grab and Push Bars



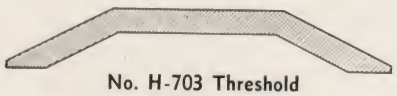
Standard Style Kick Plate—Brass or Bronze



No. H-687



No. H-735 Push Bar



No. H-703 Threshold



No. H-706 Threshold



GRANT PULLEY AND HARDWARE COMPANY

TELEPHONE CONNECTION

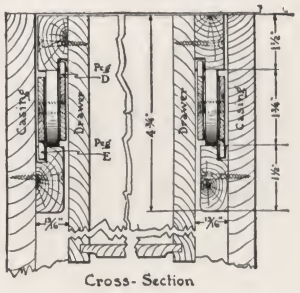
33-36 Fifty-seventh Street
WOODSIDE, LONG ISLAND, N. Y.

CALIFORNIA REPRESENTATIVES, Grant Products & Hardware Co., 1221 West 11th Street, LOS ANGELES

Agents in all the principal cities of the United States and Canada, and our Name will be found listed in the Telephone Directories
For Our Sash Pulleys, Window Hardware, etc., and for Grant Elevator Equipment Corp., see Manufacturers' Index

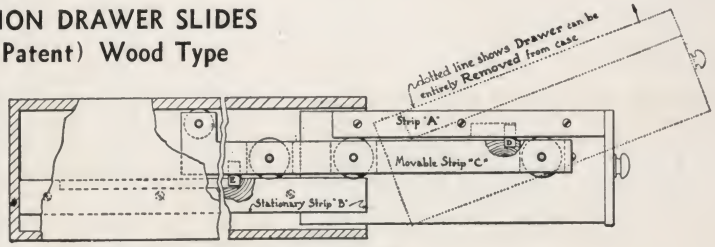
ANTI-FRICTION DRAWER SLIDES

"Turner" (Patent) Wood Type



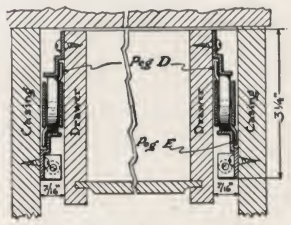
Cross-Section

Two types: 1½-in. and 2-in. strips. 1½-in. requires 4¾-in. height. 2-in. requires 6¼-in. height. 2-in. sets for heavy duty made of hardwoods.



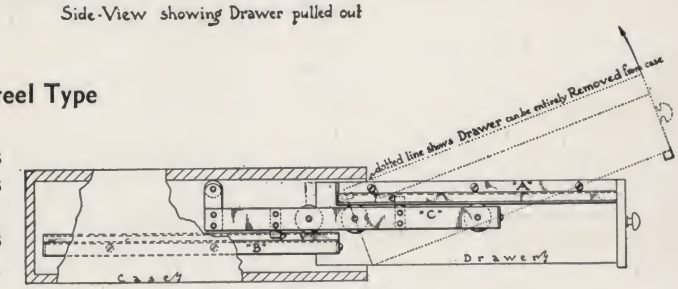
Side-View showing Drawer pulled out

"Gem" Steel Type



Cross-Section

All-steel, except fibre wheels are steel bushed. Requires 3¼-in. height. Operating and removing features same as "Turner" Wood Slide above.

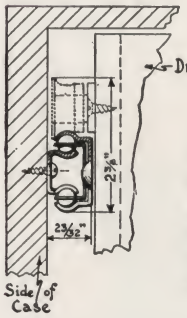


Side View showing drawer pulled-out

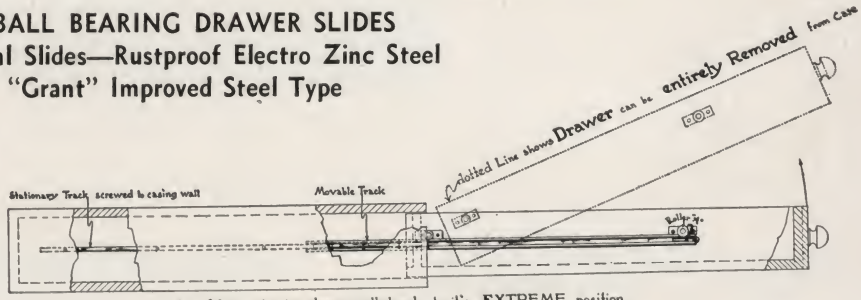
BALL BEARING DRAWER SLIDES

All-metal Slides—Rustproof Electro Zinc Steel

"Grant" Improved Steel Type



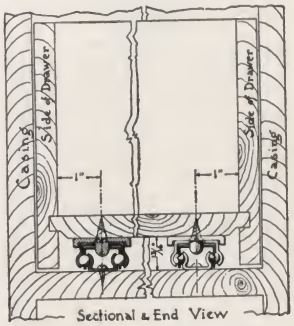
All-steel ball bearing slide. Requires 2⅜-in. height. For heavy duty, medium weight drawers. Installed with minimum labor. No mortising.



Side-View showing drawer pulled-out, to it's EXTREME position

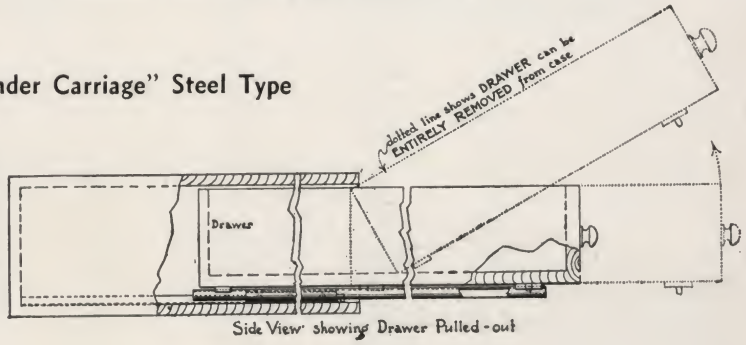
Manufactured of Electro-Zinc Plated Steel, (R·u·s·t·p·r·o·o·f)

"Grant Under Carriage" Steel Type



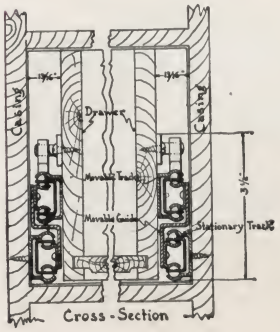
Sectional & End View

All-steel ball bearing slide. No side clearance needed; $\frac{13}{16}$ in. between bottom of drawer and case. Existing drawers can be altered to suit.



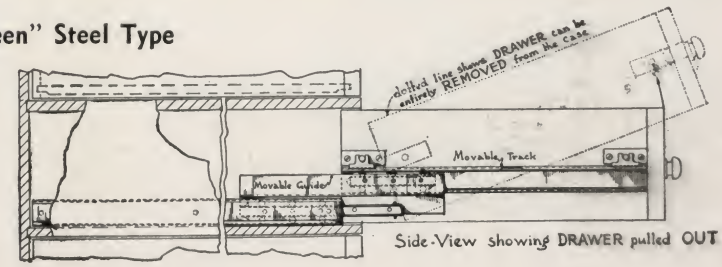
Side View showing Drawer Pulled-out

"Queen" Steel Type



Cross-Section

All-steel ball bearing slide. Requires 3½-in. height on side of drawer. A heavy duty slide for heavy drawers. Safe load, 150 lbs.



Side-View showing DRAWER pulled OUT

VONNEGUT HARDWARE CO.

Von Duprin Self-releasing Fire Exit Devices

INDIANAPOLIS, IND.

VON DUPRIN DISTRIBUTERS

ATLANTA, GA., Thos. G. Perry, 62 Bartow St.
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ST. LOUIS, MO., W. E. Way, 825 Chemical Bldg.
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WASHINGTON, D. C., W. I. Peak, 2915 Connecticut Ave., N. W.
HONOLULU, H. I.: Lewers & Cooke Ltd. PORTO RICO: Dario Nuin, Mayaquez AUSTRALIA: Universal Lock and Hardware Co., Sydney

WHEN YOU BUY THE GENUINE NEW SERIES TYPE "B" VON DUPRIN, THIS IS WHAT YOU GET

Von Duprin

TRADE-MARK
(Registered U. S. Pat. Off.)

Drop Forged Brass or Bronze

Protected by numerous United States and Foreign Patents and Trade-mark registration

A highest grade, most reliable, strong, extra heavy mortise lock type panic device, a device embodying every refinement known in panic device construction—a device listed as standard by the Underwriters' Laboratories, Inc.

All interior parts are made of special hard bronze; bars and exterior members are made of brass or bronze only.

The cross bar is double acting, to or from the door, and is made of one-inch, 16-gauge seamless brass or bronze tube.

The ball compensating vertical rod construction permits rods to compensate with the winding or warping of doors and positively prevents the binding of the rods.

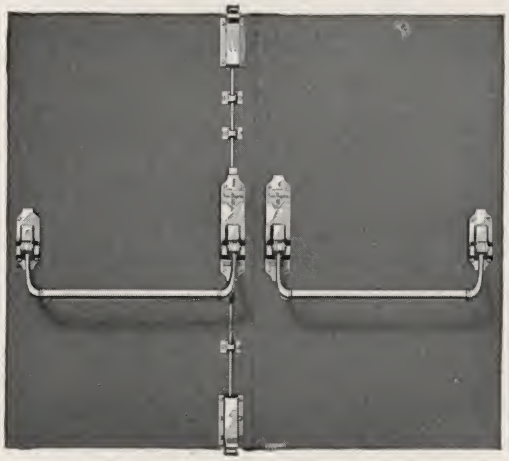
The cross bar is dogged down with a direct drive into the lever arms at both ends of the cross bar, insuring absolute rigidity. The dogging action is controlled by a key.

Cross bar axles are so constructed that they can not drop out or be easily removed.

The vertical latches are of the easy spring Pullman type, with a long swing, and operate entirely independent of each other.

All springs are of the compression type and are made, to our specifications, of phosphor bronze. Flat wire.

All stumps receiving unusual shock are made of hardened steel. Heavy wearing parts are covered with case hardened steel sleeves, reducing friction to a minimum. The cylinder locks are made specially for panic bolt service and have remarkably long life.



A Typical Type "B" Von Duprin Combination

Von Duprin Extruded Architectural Bronze Thresholds with Strikes, Buffers and Integral Parts

Patent Applied For



Fig. 12394—Threshold Wind Break and Water Shed

By specifying Von Duprin thresholds with buffers, strikes and integral parts, you automatically eliminate practically all chance of an unsatisfactory installation and consequent condemnation of the panic bolts.

These thresholds are made of architectural bronze to your order, are shipped with the devices so that they may be installed at the same time, and are ready for installation with screw holes drilled and $1\frac{1}{4} \times \frac{5}{16}$ inch No. 18 brass machine screws and A. J. Type expansions included.

These thresholds cost very little, if any, more than the ordinary brass or bronze threshold and do very much to assure a highly satisfactory installation.

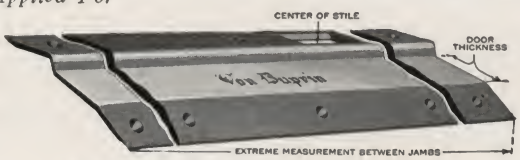


Fig. 12392—Wind Break and Water Shed

Fig. 12393—Same. Opposite hand.

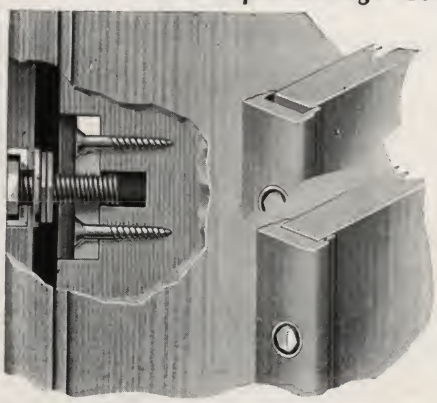
Rabbeted three-way thresholds $\frac{1}{32}$ in. high, $\frac{11}{64}$ in. thick top, 5 in. for $1\frac{3}{4}$-$2\frac{1}{4}$-in. doors



Section Through Threshold Showing Latch in Position

For thresholds No. 12392, 12393 and 12394

Von Duprin Astragal Compensator



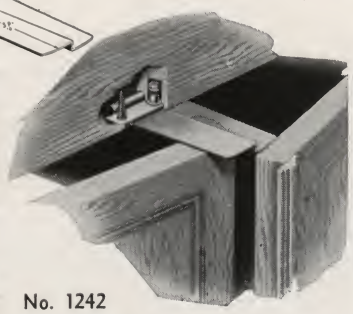
Pairs of doors designed to operate independently must be made flat faced. When these doors shrink, wide openings appear, allowing air to enter and sometimes permitting picking of the lock.

The new Von Duprin Compensating Astragal Fixture No. 1246 completely overcomes this objection by making possible easy, quick adjustment of the gap. When doors shrink — or swell—the gap is adjusted in a few seconds, using a special wrench—no skilled labor.

Von Duprin Co-ordinating Devices

Cast Brass or Bronze





No. 1242

These devices automatically control closing of independent doors with overlapping astragals, as well as rabbeted face doors. By simply holding the active door until inactive door has closed, they frustrate any attempt to close the active door first.

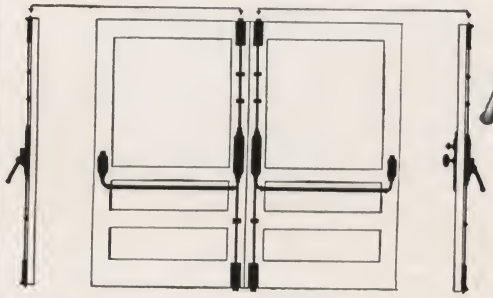
No. 1242 type will be found very satisfactory where some adjustment may be necessary at time of installation, since it is a simple matter to shorten the arm of this type by cutting with a hack saw.

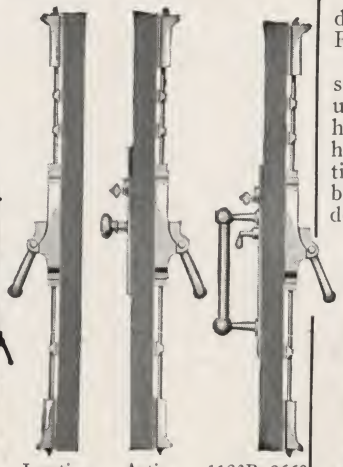
NEW SERIES GENUINE TYPE "B" VON DUPRIN DEVICES

Drop Forged Brass or Bronze

Vertical Rod Combinations for Double Entrance Doors Opening Outward

In all combinations prefix L.R. if latch retractor is wanted





Inactive 1127B — Active 1123B — 1123Bx2660 Ittner

Combination No. 11B for Main Entrance Doors, Where Threshold Is Used

Inactive door equipped with No. 1127B, Type "B" Von Duprin. Active door equipped with No. 1123B, Type "B" Von Duprin.

Combination No. LR11B, Where Threshold Is Not Used

Combination No. 011B Ittner for Main Entrance Doors, Where Threshold Is Used

Inactive door equipped with No. 1127B, Type "B" Von Duprin. Active door equipped with No. 1123Bx2660 Ittner Type "B."

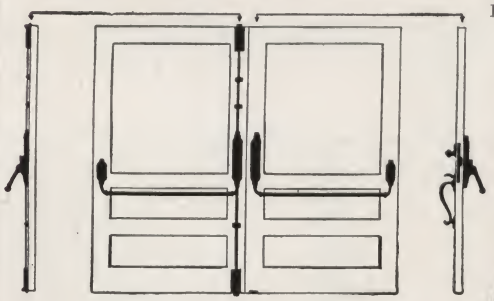
Combination No. LR011B, Where Threshold Is Not Used

Combination No. 15B for Double Exit Doors, Where Threshold Is Used

Both doors equipped with No. 1127B, Type "B" Von Duprin.

Combination No. LR15B, Where Threshold Is Not Used

Useful Mortise Lock Combinations for Double Main Entrance Doors Where Threshold Is Used





1130B Single 1730B Double — 1129½B Single — 1129B Single

Combination No. 12B

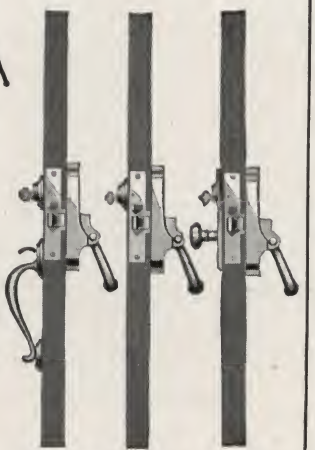
Inactive door equipped with No. 1127B, Type "B" Von Duprin. Active door equipped with No. 1724B, Type "B" Von Duprin. (This device is so and so.)

Combination No. 13B

Inactive door equipped with No. 1127B, Type "B" Von Duprin. Active door equipped with No. NL1724B, Type "B" Von Duprin (grip and cylinder, no thumb piece, on outside of door).

Combination No. 14B

Inactive door equipped with No. 1127B, Type "B" Von Durpin. Active door equipped with No. 1722B, Type "B" Von Duprin.



1724B Active 1124B Single — NL1141B Single NL1741B Double — 1722B Active 1122B Single

Von Duprin Type "A" Devices

Cast Brass or Bronze

These devices are designed for single entrance doors and for double entrance doors with mullion. For doors opening outward only.

They are specially made for high-class shop and school entrance doors and are built to stand up under hard service. The Type "A" device has a heavy rim cylinder lock, the latch bolt is of the heavy, hinged, car door type, very easy in operation and proof against binding. Cross bars can be dogged at both ends by special key dogging device.

Double Cylinder Type

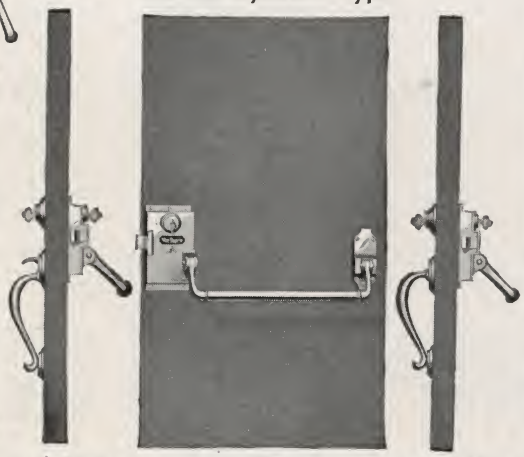
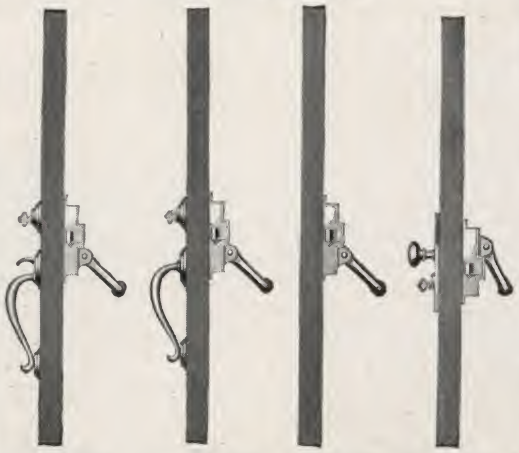


Fig. 1025A — Inside Elevation Not reversible — **Fig. NL1025A** Night Latch Action

No. 1025A "Bulldog"—May be locked by turning key in inside cylinder, barring admittance except by key, but permitting the door to be opened from the inside by a touch on the cross bar. Outside cylinder has night latch movement. When locked on the inside and entered by unlocking from the outside, it remains locked until key is turned in inside cylinder. Furnished with grip and thumbpiece.

No. NL1025 "Bulldog"—Has night latch action only. Furnished with grip but without thumbpiece.

Single Cylinder Type



No. 1026A — **No. NL1026A** Night Latch Action — **No. 1028A** — **No. 1225A**

No. 1026A "Bulldog"—The outside cylinder deadlocks the thumb latch. Exit is normal from inside by a push on the cross bar. Furnished with grip and thumbpiece on the outside of the door.

No. NL1026A "Bulldog" — Same as 1026A, omitting thumbpiece—night latch action only.

No. 1028A "Bulldog"—For exit only. No outside unlatching feature.

No. 1225A "Bulldog"—Latch operated from outside in same manner as any ordinary lock and latch device. Featured to unlatch bolt from inside by touch against bar, even though deadlocked from outside.

No. NL1225A "Bulldog"—Same as No. 1225A, omitting knob and escutcheon, and has night latch action only.

No outside hardware except cylinder.

ACKERMAN-JOHNSON CO.

Expansive Screw Anchors, Expansion Bolts, Concrete Inserts

625 West Jackson Boulevard, CHICAGO, ILL.

NEW YORK OFFICE, 53 Park Place

Products

ACKERMAN-JOHNSON EXPANSIVE SCREW ANCHOR; EXPANSION BOLTS; CONCRETE INSERTS. U. S. Patents: April 27, 1915, December 21, 1915, April 4, 1916, May 14, 1918; others pending. Patented in Canada, Great Britain, France, Belgium; others pending.

Ackerman-Johnson Expansive Screw Anchor

Adaptability—For attaching objects to hard materials, as concrete, brick, stone, tile, marble, etc.

Description and Operation—Consists of a doubly tapered internally threaded cone made of brass, iron or steel (Fig. 1), within a lead composition ductile sleeve (Fig. 2). These are assembled at the factory, the sleeve being forced on the cone to a normal position as at Fig. 3.

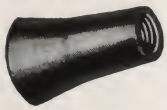


Fig. 1

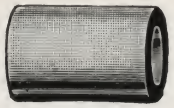


Fig. 2



Fig. 3

Ackerman-Johnson Expansive Screw Anchor

When installed as illustrated, the sleeve is driven farther toward base of the cone and is expanded generally to any degree required to swedge tightly against the sides of hole, effecting perfect holding contact throughout the length and circumference of the anchor. Thus consolidated with the wall material, the anchor provides a machine threaded hole the same as an ordinary tapped hole in a machine part. Any object may then be attached with a standard screw or bolt of suitable diameter.

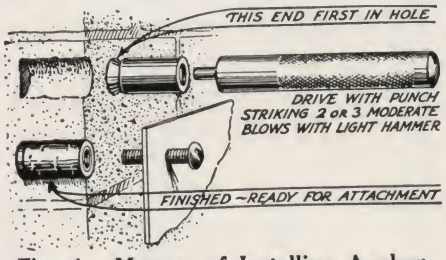


Fig. 4. Manner of Installing Anchor

The piloted setting punch supplied without charge with all anchors

The heavier the load attached, the more forcible becomes the expansion, causing the anchor to resist effort to pull it out far beyond the tensile strength of any screw or bolt.

Distinctive Advantages—Time saving through the use of Ackerman-Johnson anchors compared with old methods more than compensates their total cost.

They save much of drilling cost, requiring least depth for any stated load. They are installed instantly, without the aid of the screw, and before the fixture is lifted into position to be fastened. Their margin of safety is equal to that of steel bolts of correlating size.

They necessitate the least displacement of wall material and consequently less injury to buildings. They effect the neatest possible workmanship.

Sizes—The size of anchor is designated as the size of the bolt or screw to be used. Example: For No. 10-24 screw, use No. 10-24 anchor; for ⅜-in. bolts use ⅜-in. anchor.

SIZES, EXPANSIVE SCREW ANCHORS

Screw or bolt sizes	Threads per in.	Minimum dimension of holes required, inches		Specify anchor Size No.
		Diam.	Depth	
No. 6	32	¼	⅜	6-32
" 8	32	5/16	½	8-32
" 10	24	⅜	⅝	10-24
" 12	24	7/16	¾	12-24
¼"	20	½	⅞	¼-20
5/16"	18	⅝	1	5/16-18
⅜"	16	¾	1¼	⅜-16
7/16"	14	⅞	1½	7/16-14
½"	13	7/8	1½	½-13
⅝"	11	1⅛	2	⅝-11

Packed 50 or 100 in box.

Stud Type Expansion Bolts

So great is the holding power of this anchorage, that when set in strong stone or concrete with only its one primary sleeve expanded, the bolt shank can be pulled in two, without the anchorage yielding.

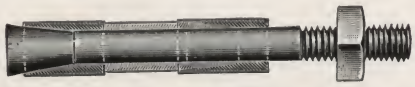


Bolt with Primary Expansive Sleeve Only



Bolt with Primary and One Secondary Expansive Unit

Secondary Expansive Units—Made up of an expansive sleeve and a slip steel cone, giving additional anchorage equal to the primary unit. Calculate the minimum depth of holes for setting at twice the diameter of hole drilled.



Sectional View Showing Bolt with Primary Expansion Sleeve, One Iron Spacing Sleeve, and One Secondary Expansive Unit

Fig. 5. Stud Type Expansion Bolt

Diam. of bolt, at thread .....in.	¼	⅜	½	⅝	¾
Diam. for hole ...in.	⅜	9/16	¾	1	1⅛
Lengths of bolts in inches	1¼	1¾	2½	3½	5
	1½	2	3	4	6
	1¾	2½	3½	5	7½
	2	3	4	6	9
	2½	3½	4½	7½	10
	3	4	5	9	12
	3½	4½	6	10½	15
	4	....	7	12	18
	....	....	8	15	....
Other Lengths					

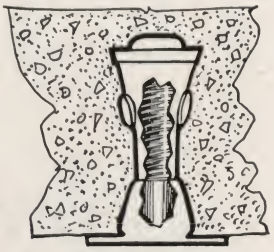
Concrete Inserts

Ackerman-Johnson concrete inserts for moulding into the concrete when poured, afford minimum displacement of the concrete and maximum speed in setting. Can be furnished for all sizes of screws and bolts up to ⅝-in. diameter.

We invite requests for full information concerning inserts.



Exterior View of New Ackerman-Johnson Concrete Insert



Cross Section Showing Insert Imbedded in Concrete

Users of Ackerman-Johnson Products

Extensively adopted by leading contractors, manufacturers, railroads, shipyards, government departments and public utility companies.

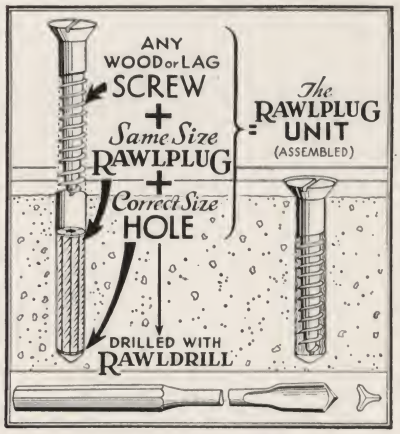
THE RAWLPLUG COMPANY, INC.

98 Lafayette Street
NEW YORK, N. Y.

REPRESENTATIVES IN PRINCIPAL CITIES

Rawlplugs

A screw anchor of unequaled holding power. Rawlplugs hold equally well in any material. Their unique composition makes them especially adaptable for anchoring screws in fragile materials such as glass, hardwood, tile, plaster, marble, etc.



Rawlplugs will not mar handsome interiors, crack marble or other delicate building materials. They cannot work loose, shrink or shear. They are waterproof and will not deteriorate, crumble or pulp.

The diameter of the Rawlplug, hole and screw are virtually the same. The screw entering the Rawlplug compresses it against all sides and into all irregularities of the hole. The entire Rawlplug becomes an integral part of the material which surrounds it, giving a grip greater than that of any other material.

RAWLPLUGS

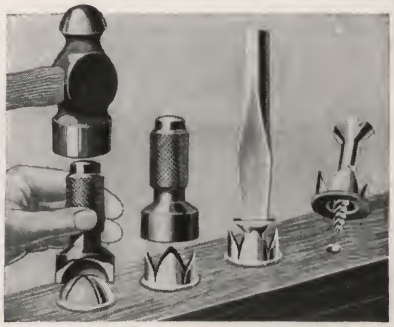
Rawlplugs are made for No. 6 to No. 20 screws, including all lengths, and lag screws ¼ to ⅜ in., including all lengths.

The Crowner

For sealing and concealing all forms of screw heads, bolt heads, nuts, etc.

This is one of the most unique and useful products ever devised for enhancing the beauty of buildings. Their advantages are many—(1) They permit the use of stronger and less expensive iron screws, replacing brass, bronze and specially plated screws. (2) Prevent tampering with screws. (3) Provide a cap that will not rust. (4) Substitute a beautiful finish for unsightly screw and bolt heads, nuts, etc. (5) Simple to apply as driving a nail. (6) Made for every size screw, bolt and nut. (7) They are made to match any finish desired.

CROWNERS
TRADE MARK REG. U.S. PAT. OFF.



Method of Crowner Installation

Literature

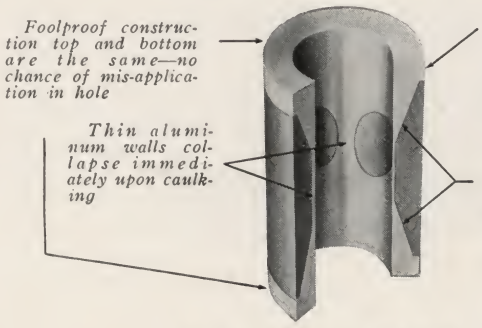
Send for Architect's File Folder which gives complete information, advantages, sizes, prices, tests and suggestions for uses and specifications.



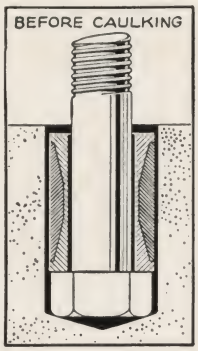
Lok-Crowners Installed in Empire State Building, New York, N. Y.
SHREVE, LAMB & HARMON, Architects

Rawl-Anchors

A one-piece, heavy duty, double-expanding, double-ended masonry anchor for bolts.

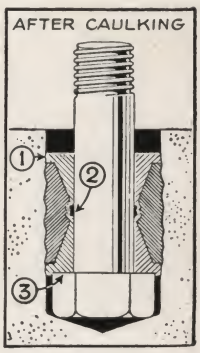


RAWL-ANCHORS



Note (2) how the collapsible section has telescoped and how expansion takes place at both top and bottom cones, so that anchor completely fills the hole. The aluminum collar at top (1) has spread so as to fill the hole and prevent creeping of lead. The same is true of the collar at the bottom, and note (3) how the bolt head has imbedded itself into this collar and cannot turn.

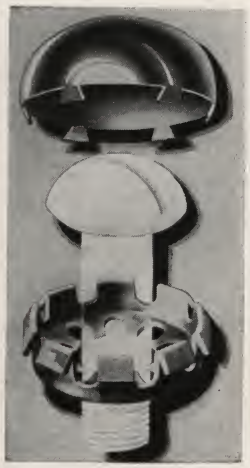
The Rawl-Anchor will outhold any multiple unit anchor now on the market.



Rawl-Anchors are made for all size bolts from ¼ to 1 in.

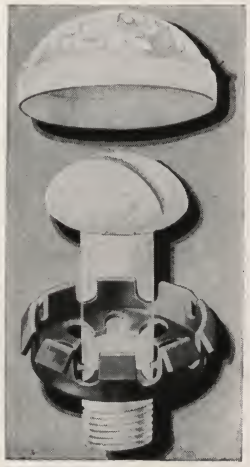
The Lok-Crowner

A combination Crowner and lockwasher in decorative designs. In addition to all the features of the Crowner, they have the following advantages: (1) They prevent the loosening of screws or nuts from vibration or shrinkage, being combined with a special lockwasher. (2) Cover lockwasher completely, preventing rust or stain. (3) They allow a wide scope in decorative designs and finishes. (4) They are made in two types—removable and non-removable. The latter, once installed, becomes fixed and a part of the covered head. It is quickly snapped in place and afterwards driven home by a slight blow of a hammer.



Left: **Non-removable Lok-Crowner**

Right: **Removable Lok-Crowner**



LOK-CROWNERS
TRADE MARK

FURNISHINGS

ART METAL CONSTRUCTION COMPANY

Steel and Bronze Interior Equipment

GENERAL OFFICES AND FACTORIES
JAMESTOWN, N. Y.

BRANCH OFFICES

ALBANY, N. Y., 100 State Street
BALTIMORE, MD., 124 West Fayette Street
BOSTON, MASS., 94 Federal Street
CHICAGO, ILL., 173 West Madison Street
CINCINNATI, OHIO, 503 Duttenhofer Building
CLEVELAND, OHIO, 901-902 National City Bank Building
DALLAS, TEX., 507 Construction Building
DETROIT, MICH., 333 State Street
HARTFORD, CONN., 75 Pearl Street
KANSAS CITY, MO., 110 Scarritt Building
LOS ANGELES, CAL., 942 So. Hope Street
MEMPHIS, TENN., 1759 Glenview Avenue
MINNEAPOLIS, MINN., 1441 Northwestern National Bank Building
NEW YORK, N. Y., 369 Broadway
PHILADELPHIA, PA., Ninth and Sansom Streets
PITTSBURGH, PA., 630 Oliver Building
SEATTLE, WASH., 310 Columbia Street
ST. LOUIS, MO., 810 St. Louis Mart Building
ST. PAUL, MINN., 350 Minnesota Street
WASHINGTON, D. C., 301 Southern Building
LONDON, ENGLAND, 199-203 Buckingham Palace Road

For Art Metal Hollow Metal Doors and Trim, Ornamental Bronze Work, Sectional Metal Office Partitions and Hospital Equipment, see Art Metal Construction Company in Manufacturers' Index

ART METAL EQUIPMENT FOR BANKS

For over forty years ART METAL CONSTRUCTION COMPANY has assisted architects, bankers and public officials in arranging and decorating banks and buildings. Practically every city in America does its banking in one or more institutions in which the steel equipment and bronze grilles, doorways and furniture were produced by the ART METAL CONSTRUCTION COMPANY. One bank in every four has Art Metal furnishings. This vast experience of the Art Metal engineers and designers in building metal equipment for bank interiors is available to every architect.

TRADE-MARK

Art Metal
Jamestown New York
U S A

Art Metal equipment for banks includes the following: Bronze entrance and vestibule doors; elevator enclosures; check desks, counter screens; wicket and vault grilles; cage partitions; bank counters, filing equipment; bookkeeping desks; savings ledger desks; desks for officers' use; coupon booths, etc.

BANK SCREENS AND COUNTERS

Counter Screens

The ART METAL CONSTRUCTION COMPANY has produced every style of bank equipment for every size and kind of bank from the large metropolitan banking institutions to the modest rooms of banks in small communities all over the country.

While the style of this equipment is largely one of individual taste the modern trend is away from the high, massive screen towards the low one which gives a more open, airy effect, enhancing the architectural design and decorative details of the banking room. In some instances the screen above the counter is entirely eliminated. Art Metal counter screens are composite fixtures built with metal or marble front, harmonizing in material and finish with the architectural scheme.



Straight Counter with Medium Height Screen
Union and Peoples National Bank, Jackson, Mich.
ALBERT KAHN, INC., Architects

A Type of Counter for Every Need

ART METAL CONSTRUCTION COMPANY makes two general types of counters: the usual flat or slope top counters and the counter provided with a metal roll top which can be readily closed, protecting everything on the counter when the teller is temporarily absent.

The space below the counter may be left open or may be fitted with drawers, cupboards, roller shelves or any style of filing devices, which can be covered with doors or curtains if desired.

Teller's Cages

Where cages are desired there are many types. They may be of metal panels as high as the counter with glass or rails above. A metal lattice or a perforated metal grille may be used in the lower portion to afford ventilation.

Co-operation with Architects Insures Individuality

Working from blue prints of the floor plans, Art Metal engineers will be glad to submit modern layouts of counter equipment and cages for the most efficient conduct of the work of the bank. This is done after consultation with the architect and banking officials and a determination of the particular requirements.

Architectural individuality is obtained by Art Metal designers working with the architect and carefully modelling the details from his designs. All work is individually prepared and carefully executed for each important contract. Bronze is finished with cutting tools, chisels, files and gravers. Often the natural skin of the metal solidified in contact with the mould is preserved. Then again it is carved and chased, beaten, wrought and embossed.

It has been our good fortune to visualize in bronze and steel the designs of the most eminent architects. The interior of an Art Metal bank is remembered for its genuineness, dignity and all-pervading refinements.

ART METAL EQUIPMENT FOR PUBLIC BUILDINGS

Public building equipment is nearly always of steel. This insures long life under the extremely hard wear to which such equipment is subjected and also reduces the hazards of fire.

Art Metal engineers will gladly consult with architects and public officials and after ascertaining the requirements, will submit layout to care for the records most efficiently.



Clerk of Courts Index Room, Hamilton County Court House, Cincinnati, Ohio
Roller shelving, files and desks



New York County Court House, New York, N. Y.
Counter with cupboards and drawers below
GUY LOWELL, Architect

ART METAL EQUIPMENT FOR LIBRARIES

Art Metal Steel Library Equipment is used in a large percentage of the modern libraries in this country as well as many foreign countries.

If the architect wishes to view an installation, the company will be glad to refer him to several in or near his locality.

Every state in the Union, as well as practically every important city, has many Art Metal installations.

The production of a complete line of modern fire-resisting steel equipment for libraries and museums of various kinds is a specialty of this company. The line of products is complete to meet the needs of small private or town libraries to the great city libraries, such as the Free Library of Philadelphia. Among the important recent Art Metal library installations are, Yale Divinity School, Chicago Historical Society, State Library, Harrisburg, Pa., and Enoch Pratt Free Library, Baltimore, Md.

The company solicits an opportunity to present plans and estimates for any library work desired.

All work is done in its own plants in Jamestown under the supervision of its library engineers.



Yale Divinity School, Yale University, New Haven, Conn.
DELANO & ALDRICH, Architects
SPERRY & TREAT CO., General Contractors

Art Metal Combination Steel Ceiling—Concrete Floor with Integral Wire Raceways

(Patent Applied For)

This new type of deck floor construction has been developed to meet the demand for a modern flush ceiling and a light strong floor, without any obstructing beams or conduits. The concrete floor slab, poured in the steel ceiling pan, which also acts as reinforcement, is directly supported by bearing plates on columns. AMCO DUCT concealed wire races, bearing the Underwriters' label, are made an integral part of the floor construction.

CLEAR-VISION COUNTERS, INC.

Operating Under Domestic and Foreign Patents

FORMERLY JOHN POOLE

619 14th Street, N. W.
WASHINGTON, D. C.

JOHN POOLE "CLEAR VISION" OR "FRIENDLY" COUNTER

License

We license the use of this system, and shall quote a license fee to any one interested, the fee being based upon the number of feet of counter used.

Patents

Each bidder shall include in his estimate a sum sufficient to cover the license on the low-type counter. These patents—No. 1,210,802; 1,235,567; 1,420,942; 1,673,639—are owned and licenses are issued by CLEAR-VISION COUNTERS, INC., 619 Fourteenth Street, N. W., Washington, D. C.

Application

The drawing below clearly indicates both the form and construction of this unique counter for banks, brokers' offices, building and loan association offices and, in fact, for all types of offices in which a cage or partition was formerly considered necessary for the protection of the person in charge and the cash he was handling.

Advantages of the "Clear-Vision" Counter

Light and vision are greatly improved.

Ventilation is much better because of the absence of high partitions and glass.

Greater protection is assured due to the visibility of the working quarters.

The absence of high partitions gives the effect of a larger room.

The counter forms a continuous window and every foot is available for service if needed, thus allowing the maximum flexibility and elasticity.

It is cheaper to build because less material and labor are required.

Fifty per cent greater utility of floor space is obtained.

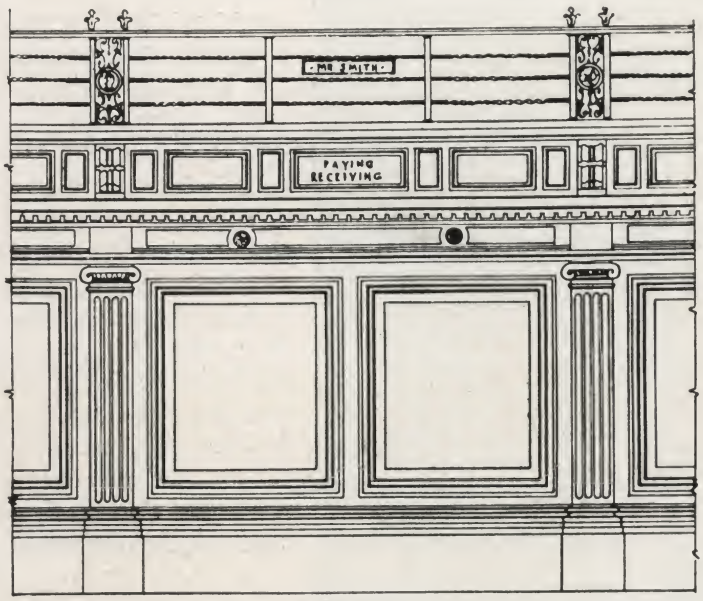
More intimate relations between customer and teller are established.

Special Construction

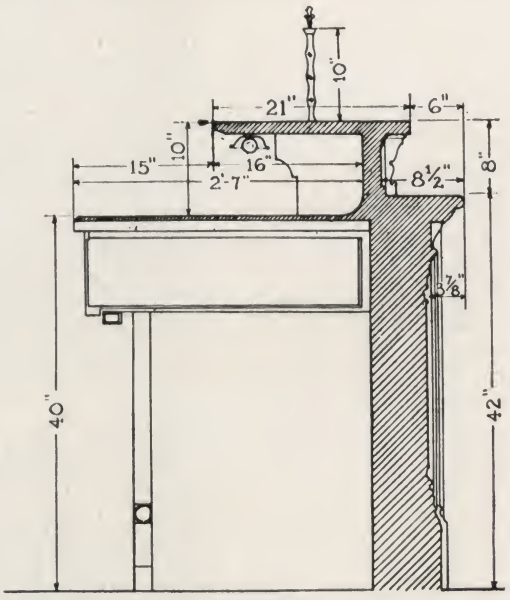
Each counter is constructed in accordance with the architect's own details and specifications, which naturally will reflect the architect's and prospective user's own individual ideas and tastes.

Some Installations of the John Poole "Clear-Vision" Counter

Federal-American National Bank, Washington, D. C.
Chase National Bank, New York, N. Y.
City National Bank & Trust Co., Bridgeport, Conn.
Hartford National Bank & Trust Co., Hartford, Conn.
Indiana Trust & Savings Bank, Evansville, Ind.
National Shawmut Bank, Boston, Mass. (Branch)
Framingham Trust Company, Framingham, Mass.
Farmers & Mechanics Bank, Ann Arbor, Mich.
State Bank & Trust Company, New York, N. Y. (Branch)
Savings Bank of Utica, Utica, N. Y.
First National Bank, Grand Forks, N. D.
Barclay-Westmoreland Trust Co., Greensburg, Pa.
Atlanta and Lowry National Bank, Atlanta, Ga. (Branch)
First National Bank of Atlanta, Atlanta, Ga.



ELEVATION



SECTION

ONE POPULAR TREATMENT OF THE "CLEAR-VISION" COUNTER

Upon request we will gladly furnish a booklet showing architectural treatments

ESTABLISHED 1898

GARDEN CITY PLATING & MFG. CO.

Architectural Brass and Bronze Work

1430 South Talman Avenue, CHICAGO, ILL.

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REPRESENTATIVES IN PRINCIPAL CITIES

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ARCHITECTURAL METAL WORK: Display Case Frames, Grilles, Wickets, Bank Counter Screens, Bank Vaults and Cage Metal Work, Mail Boxes, Register Boards.

GARCY TRADE MARK REG.

For our pages on Hardware for Adjustable Shelving, Pullout Garment Carriers, and Lighting Reflectors, see Manufacturers' Index.



Moderne-Ogden
Extruded moulding



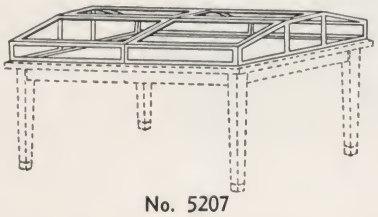
Moderne-Talman
Extruded moulding



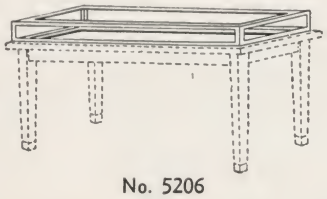
Moderne-Carmen
Extruded moulding

Museum or Store Display Cases

"Garcy" metal frame display cases (furnished complete, except for wood and glass) combine beauty and durability in the highest degree. Thirty-three years of close co-operation with department stores, specialty shops, museums, fixture manufacturers and equipment designers, in producing display case hardware and frames, has made our line of this material extensive and complete.



No. 5207



No. 5206

Architectural Metal Work

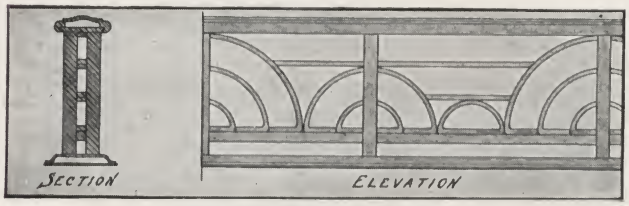
We specialize in producing architectural metal work of every description in extruded, rolled, cast or wrought metal.



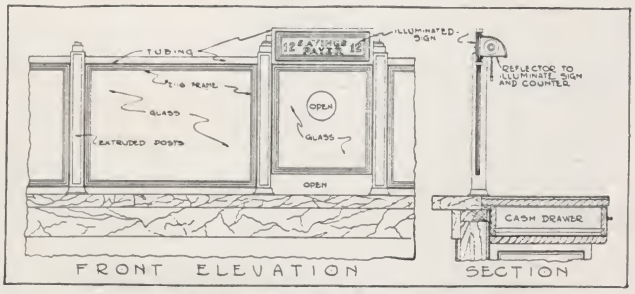
No. 5200. Extruded Nickel Silver Show Case Frame

With metal frame glass doors sliding on rollers and track. Metal frame glass shelves with keyhole standards and adjustable brackets. Reflector to illuminate interior of case.

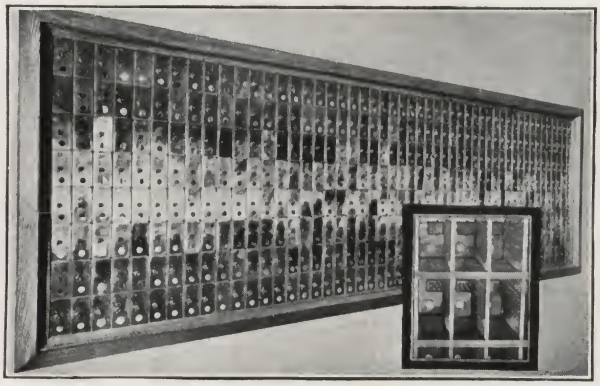
Details for this or any other type of display case furnished on request



No. 1420. Design for Railing



No. 1312. Design for Counter Screen



No. 1424. Mail Boxes
For hotels, hospitals, schools, etc. Inset shows open rear end of boxes



No. 1433. Hand Hammered Ventilating Grilles

THE GLOBE-WERNICKE COMPANY

Steel and Wood Equipment for Banks, Libraries, Schools, and Public Buildings

CINCINNATI, OHIO

FACTORIES: CINCINNATI, OHIO and AVENEL, N. J.

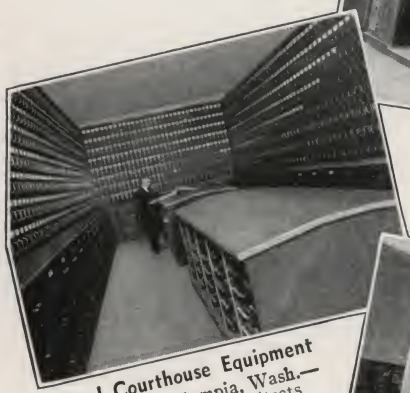


Left and Below:
Wood Courthouse Equipment

State Capitol, Baton Rouge, La.—Weiss, Dreyfous & Seiferth, Inc., Architects



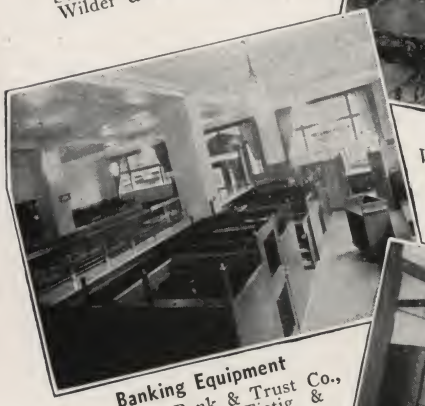
Orleans Parish Criminal Courts and Jail Building, New Orleans, La.—Diboll & Owen, Architects



Steel Courthouse Equipment
State Capitol, Olympia, Wash.—Wilder & White, Architects



Library Equipment
Walnut Hills High School, Cincinnati, Ohio—Garber & Woodward, Architects



Banking Equipment
Western Bank & Trust Co., Cincinnati, Ohio—Tietig & Lee, Architects



Partitions
Eagle Picher Lead Co., Cincinnati, Ohio



Visible Records
Butler Brothers, Chicago, Ill.

Products and Services

FILING CABINETS and SUPPLIES.
VISIBLE RECORDS.
STATIONERS' PRODUCTS.
STEEL OFFICE FURNITURE.
BANKING EQUIPMENT.
STEEL SHELVING.
LIBRARY EQUIPMENT.
OFFICE and INDUSTRIAL PARTITIONS, STEEL and WOOD.
COURTHOUSE EQUIPMENT
SPECIAL BUILT EQUIPMENT.
COMPLETE PUBLIC BUILDING INSTALLATIONS.

Established 1882

For a half century, Globe-Wernicke has been manufacturing high grade steel and wood equipment for courthouses, municipal buildings, banks, libraries, schools, hospitals, corporations, and office buildings.

We are in a position to handle complete interior requirements.

We maintain a Service Department for surveys, plans, specifications and estimates. The services are always available.

The extensiveness of the Globe-Wernicke line of steel and wood equipment enables the architect and builder to quickly solve problems of space and filing arrangement.

Complete catalogue of all stock equipment will be sent on request.

A Few Recent Installations

Louisiana State Capitol, Baton Rouge, La.
Weiss, Dreyfous & Seiferth, Inc., Architects

Orleans Parish Criminal Courts and Jail Building, New Orleans, La.
Diboll & Owen, Architects

Walnut Hills High School Library, Cincinnati, Ohio
Garber & Woodward, Architects

Providence County Courthouse, Providence, R. I.
Jackson, Robertson & Adams, Architects

Fifth-Third Union Trust Co., Cincinnati, Ohio
Graham, Anderson, Probst & White, Architects

Milwaukee County Courthouse, Milwaukee, Wis.
Albert Randolph Ross, Architect

Blackwell Public Library, Blackwell, Okla.

Northeast Branch Library, Washington, D. C.

Western Bank & Trust Co., Cincinnati, Ohio
Tieteg & Lee, Architects

Allegheny General Hospital, Pittsburgh, Pa.
York & Sawyer, Architects

Richmond Public Library, Richmond, Va.
Baskerville & Lamber, Architects; Edward L. Tilton, Consultant

JAMESTOWN METAL EQUIPMENT COMPANY

INCORPORATED

Metal Furniture and Equipment for Banks, Hospitals, Libraries, General Offices and Public Buildings

GENERAL OFFICE AND FACTORY
JAMESTOWN, N. Y.

NEW YORK CITY OFFICE, 205 East 42nd Street

Products

FURNITURE and EQUIPMENT in METAL: Bank Equipment; Library Stacks; Metal Furniture for Offices; Metal Equipment for Hospitals; Steel Shelving; Metal Partitions; Courthouse Fixtures; Vault Interiors.

TRADE-MARK

Furnished in stock designs and built to architects' specifications.

Service

Drawings, specifications, estimates and schedules of equipment for hospitals, court houses, banks, libraries and offices furnished on request.

Special types of equipment and special construction in metal fabricated to specifications. Baked enamel finishes furnished in all colors and grained to match wood samples.

Special Work

We manufacture special types of metal furniture and equipment. Quotations are furnished promptly upon receipt of estimating data.

Construction

Designing and engineering is under the supervision of capable men who have had long experience in building steel equipment of quality. The materials are carefully selected from the most suitable stocks and fabricated with modern machinery and equipment by skilled craftsmen.

Architects are invited to refer inquiries to us for estimates, submission drawings or details of construction. This service is furnished without cost or obligation.

Recent Installations

Psychopathic Hospital, New York, N. Y., Charles B. Myers, Architect
Delaware County Courthouse, Media, Pa., Clarence Wilson Brazer, Architect
Wayne County Infirmary Hospital, Eloise, Mich., Maul & Lentz, Architects
Los Angeles County Farm Hospital, Hondo, Calif., Carl W. Muck, Architect



Recorders' Book Files in Westchester County Courthouse, White Plains, N. Y.

ESTABLISHED 1900

THE RIESTER & THESMACHER COMPANY

Special Steel Interior Equipment, "Beers Dustite" Museum Cases, Interlocking Steel Stairs, Hollow Metal Doors

1514-1526 West 25th Street, CLEVELAND, OHIO

Products

METAL EQUIPMENT for hospitals, libraries, banks and public buildings, including complete Institutional Cabinet Equipment, Cases, Library Stacks, Stairs, Counters, Screens, Partitions, and Vault Equipment.

"BEERS DUSTITE" MUSEUM EXHIBITION and STORAGE CASES.

Also Special Equipment of every description fabricated of Steel, Bronze and the Stainless Steels.

For Hollow Metal Doors, and Steel Stairs, see Manufacturers' Index.

SPECIAL STEEL INTERIOR EQUIPMENT

Metal Cases and Cabinets

All types for hospitals, public and institutional buildings. Built-in or free standing construction *manufactured to* architects specifications.

A new feature of "built-in" cabinet design is the use of a separate steel buck or frame set in place at the time walls and partitions are built. This facilitates installation of the finished cabinets after other trades have completed their operations, and eliminates possible damage to the finish.

The construction of this cabinet eliminates all dust pockets—inside corners are curved, permitting ease of dusting and cleaning. Shelf adjustments are readily made without bolts or use of tools. Doors are of box frame, double wall construction, insuring absolute rigidity. Hardware is of special design for utility and neatness of appearance.

A Few Installations—St. Agnes Hospital, White Plains, N. Y., S. J. Murphy, Architect; City of Cleveland, Tuberculosis Pavilion, Herman S. Kregelius, City Architect; Charity Hospital, Cleveland, Ohio; Cuyahoga County Jail and Criminal Courts Building, Cleveland, Ohio, Warner & Mitchell, Architects.



Good Samaritan Hospital, Dayton, Ohio
SCHENCK & WILLIAMS, Architects

"Beers Dustite" Museum Cases

Exclusive manufacturers of patented "Beers Dustite" steel exhibition and storage cases and Slidetite doors for storage vaults. This case has been designed to meet the requirement of absolute air-tightness necessary to preserve valuable skins of rare birds and mammals.

A distinct feature is the dust-tight sliding door which completely seals the case, and yet permits advantageous display of specimens and accessibility when desired. Fabricated in steel and bronze in all finishes. Catalogue will be forwarded on request.

Installations—American Museum of Natural History, New York, N. Y.; Jefferson Medical College, Philadelphia, Pa.; Laboratory of Anthropology, Santa Fe, N. M.

Book Stacks

R&T standard steel book stacks for libraries for single or multiple tiers. Framing permits use of marble, stone, slate or glass deck floors. The slotted type construction affords shelf adjustment on 1-in. centers. Shelves are easily removed and adjusted.

Details and specifications will be submitted upon request.



Central Library, Jamaica, N. Y.
R. F. SCHIRMER and J. W. SCHMIDT, Architects



American Museum of Natural History, New York, N. Y.
H. F. BEERS, Equipment Engineer

WATSON MANUFACTURING COMPANY, INC.

Metal Office Furniture

EXECUTIVE OFFICE AND FACTORY
630 Taylor Street
JAMESTOWN, N. Y.

For Watson Insect Screens, see Manufacturers' Index

Products

STEEL and BRONZE EQUIPMENT for banks, courthouses, hospitals and public buildings including: Counters, Counter Screens, Cage Partitions, Office Partitions, Vault Equipment, Omnibuses, Document Files, Roller Shelves, Slope Top Standing Desks, etc.; Dressers, Chifforobes and all kinds of special Built-in Wall Cases for the hospital; Library and Vault Shelving; also a complete line of Desks, Tables and Filing Cabinets for every purpose.

WATSON
JAMESTOWN, N.Y.
TRADE-MARK

Experience

Our many years of practical manufacturing experience, a business and manufacturing organization of selected competent and trained men, a sincere desire to satisfy customers, careful adherence to details and specifications, constant study and improvements, and the use of modern designs and manufacturing processes have not only established an enviable reputation for the best in quality and service but have won the interest, friendship and confidence of our customers.



Above:
Banking Room Equipment



Above:
Vault Equipment



Right:
Various Specially Built Cases



Omnibuses

Facilities

The factory is equipped with the most modern machinery, much of it specially designed for the satisfactory production of our work.

Our central location provides the best shipping facilities.

Co-operation

Our large force of trained engineers is at the service of architects and contractors to assist with the solution of all kinds of interior equipment problems.

Estimates

Without obligation we will submit quotations and, if necessary, accompany them with submission drawings, on architects' or contractors' plans and specifications.

Catalogue

Complete catalogues giving detailed information on bank work, courthouse equipment, library stacks and hospital equipment will be mailed upon request.

Installations

We will be pleased to send complete lists of Watson installations in any particular section, or lists of our larger operations if advised of what particular kind of equipment you are interested in.

Quality

Watson Products have a well earned reputation among the leading architects and contractors for their fine workmanship, sturdy construction and everlasting quality.

These few illustrations are typical of the hundreds of important contracts where the quality of Watson Equipment has played an important part.

Only the best of all kinds of materials are used in the fabrication of Watson Products.

SNEAD & COMPANY

FOUNDED IN 1849

Manufacturers of Metal Bookstacks for Libraries

MAIN OFFICE AND WORKS
94 Pine Street
JERSEY CITY, N. J.

TELEPHONE
MOntgomery 5-6200

CABLE ADDRESS
"Sneadco, Jersey City"

CANADIAN OFFICE:
Snead & Co. Iron Works, Ltd.,
58 Wellington Street, East, TORONTO, ONT.

Products

SNEAD STANDARD and BRACKET BOOKSTACKS and NEWSPAPER STACKS in both cast iron and steel.

SNEAD STACK AISLE LIGHT REFLECTORS; BOOK DISTRIBUTORS and SNEAD ZIG ZAG VENTILATING SYSTEMS for University, College, Public and Special Libraries.

For our pages on ArmorGrids for concrete floors and Steel Partitions for office and factory, see Manufacturers' Index.



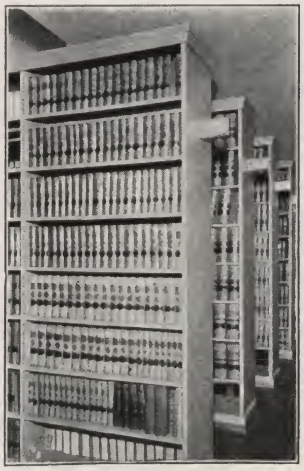
Snead Standard Stacks, Type A, University of Cincinnati Library

Snead standardized bookstacks make it possible for the small as well as large library to enjoy the finest metal appointments at quantity production prices. Ranges can be made adjustable in width, and shelves are adjustable at optional 5/8 or 1-in. intervals



Snead Bracket Stacks, California State Library, Sacramento

One tier of thirteen-tier stack, showing two sorting shelves on right front with regular shelves above and below, and newspaper shelves on left, all cantilevered from vertical steel columns. The stack is self-supporting from top to bottom



Snead Standard Steel Stacks, Essex County Law Library, Newark, N. J.

A new type of free-standing, solid upright stack. Shelves adjustable at 5/8-in. intervals, allowing maximum capacity



A Most Radical Improvement in Bookstack Construction Snead Flat Slab Reinforced Concrete Deck Floor

New and exclusive Snead feature, shown as installed in Snead Standard Stack, Type B, in Great Neck (N. Y.) Public Library. No floor framing; saves shelf space. Smooth top and bottom; improves appearance. Continuous; prevents dust settling. Wiring for Snead Aisle Lighting System imbedded in slab



Snead Standard Stacks, Type B, American Institute of Banking, New York, N. Y.

A free-standing stack with cast iron solid paneled ends. Easily erected with wrench and screwdriver

Service

The Snead staff of library experts is available for consultation, criticism, layouts, special designs and estimates, all without obligation. From a simple installation of wall shelving to a fifty-tier tower stack—nothing is too small or too large for the attention of SNEAD & COMPANY.

We are publishing a large book on library planning, containing complete architectural and engineering data on bookstacks and library equipment, including many actual library plans and designs of proven merit. Owners, architects and librarians may secure this valuable book on request.

Snead Engineers have also developed the Snead Book Distributor, the Snead Zig Zag Ventilating System, the Snead Stack Aisle Light Reflector and other accessories for the efficient library. Send for full information.



Above:

Snead Newspaper Stacks and Light Reflectors, Sterling Memorial Library, Yale University

The unique Snead bookstack structure is welded into one solid unit, bracing the immense tower walls and carrying the roof. Ranges are adjustable in width and equipped with Snead open bar shelves



Snead Stack Aisle Light Reflector

The Sterling Memorial Library contains over 4000 Snead reflectors, especially designed for this building to secure uniform light distribution and freedom from glare





Left:

Snead Book Distributor, Stack Room Station, Yale University

Conveyor has push-button control and automatic unloading device. Photograph also shows pneumatic tubes above attendant's desk and stack stairs with elevator beyond



Above:

Snead Bracket Stacks, New York County Lawyers Association, New York, N. Y.

Illustrating solid end, freestanding stacks and double tier bracket stack which permits attractive balcony effect and efficient use of space. Standard railings and stairs also built by Snead.

Snead stacks are designed for convenient future expansion both horizontally and vertically. Details of construction and accessories have been developed over a period of 50 years, so that practically every individual need can be met



Snead Rolling Cases, Toronto Public Library

Ideal for book storage where space is at a premium as capacity is increased 50%. Cases are mounted on wide rollers, each is independent, and requires neither tracks nor overhead supports

Above:

Snead Book Distributor, Delivery Desk Station, Toronto Public Library

Facilitates sending and receiving large numbers of books between stack room and public rooms. Push button controlled, quiet and trouble-free



Right:

Snead Study Carrel, Yale University

Note the sloping, linoleum top desk and lock drawer. Shelves and desk are cantilevered from uprights, and fully adjustable. Low folio case adds to privacy. Light and heat may be independently controlled in each carrel

BASSICK FLOOR PROTECTION EQUIPMENT

MANUFACTURED BY

THE BASSICK COMPANY

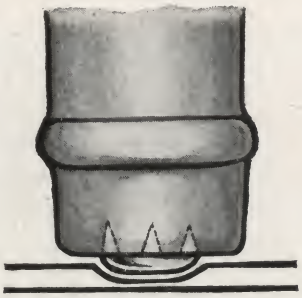
BRIDGEPORT, CONN.

FLOOR PROTECTION WITH BASSICK NOMAR FURNITURE RESTS

A Positive Protection Against Marring of Soft Floors of Linoleum, Cork, Rubber and Asphalt Tile

This information should be of particular interest to architects, for they may best serve the interests of their clients by recommending the installation of floor protection equipment.

THIS — OR — THIS



No Protection

Small metal slides so extensively used on furniture do not give adequate bearing surface to carry the weight without damage, marks and scars on floors and floor coverings.



Bassick Protection

The broad flat base of the Bassick NoMar Furniture Rests spreads the weight of furniture and protects floors. There is a size and type adaptable to any type of furniture.

Neat in Appearance

The dark brown Atlasite base adds a finishing touch of neat appearance to the furniture leg.

Tilt

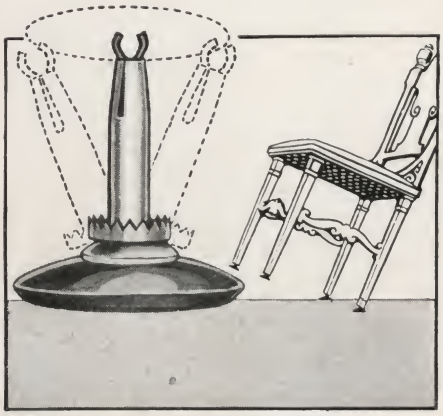
Every NoMar Rest has a flexible joint which allows the base to remain flat on floor when furniture is tilted. This is a very important feature when used on chairs. It prevents sharp edges of legs from digging into floors.

Durable

The Atlasite in the base is a special composition with a polished hard surface, which will not break, crack or chip under severe service.

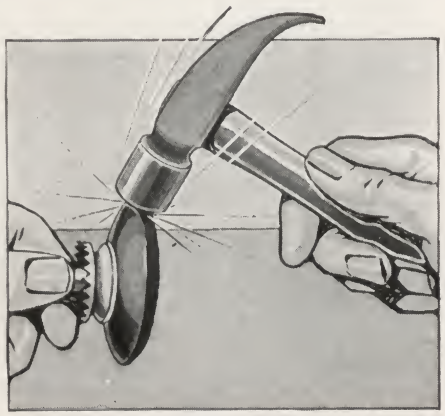
Quiet

The joint of the NoMar Rest is made with a spring tension to prevent rattles and chatter when furniture is moved.



Tilting Joint Keeps the Broad Base Flat on the Floor



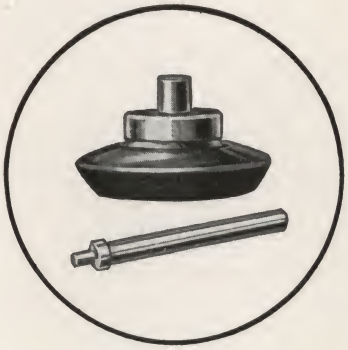


Atlasite Base Will Not Break, Chip or Rust

SPECIFICATIONAL DATA BASSICK FLOOR PROTECTION EQUIPMENT

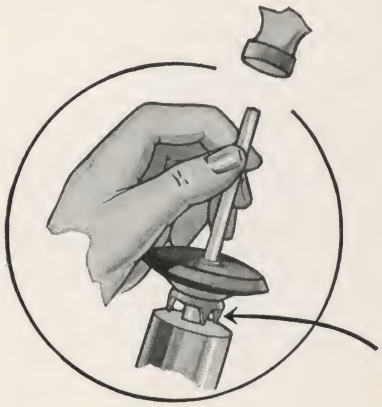
The "Drive-On" NoMar

Easy to Apply—Will Not Split



This type on furniture which has never been equipped with casters or bored for caster sockets, eliminates the necessity of boring holes.

A driving tool furnished with each set and a hammer will do the job as easy as driving a nail. A patented hollow driving tube gives a positive grip—it will not come off.



No.	Diam. of base, in.	List price, set of 4
NR-10	1¼	$0.50
NR-20	1½	.60
NR-30	2	.70
NR-40	2½	1.00

The "Socket" NoMar

For Use with Grip Neck Caster Sockets



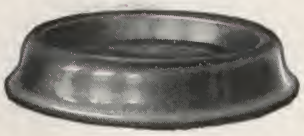
The "Socket" type NoMar is furnished with standard ⅜-in. grip neck caster sockets. Where it is desirable to replace casters or where furniture legs have caster socket holes this type should be used.



No.	Diam. of base, in.	List price, set of 4
NR-1	1¼	$0.50
NR-2	1½	.60
NR-3	2	.70
NR-4	2½	1.00

Bassick NoMar Desk Cups

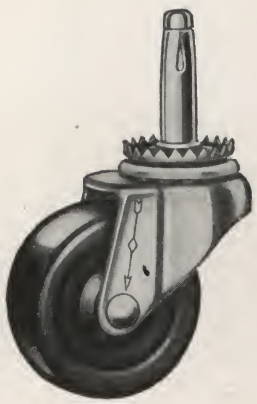
For Use Under Round or Square Desk Legs, Stove Legs, Radiator Legs, etc.



Made of brown Atlasite, neat in appearance and unbreakable these cups fill a need for attractive durable floor protection. No. NDC-6 is especially adaptable for use as a caster cup. A curved depression in the center holds the caster wheel firmly in place.



No.	Size of opening, in.	List price, set of 4
NDC-125 Square	1½	$0.90
NDC-225 Square	1¾	1.00
NDC-325 Square	2	1.30
NDC-425 Square	2⅝	1.75
NDC-6 Round	1⅜	.60
NDC-7 Round	1⅝	.80



BASSICK CASTERS

THE BASSICK COMPANY, one of the largest manufacturers of casters, makes a complete line of casters for every purpose. Information regarding proper types of casters for any furniture or equipment for use on all kinds of floor will gladly be furnished on request.

Note: *These products can be secured through leading hardware distributors and dealers, office supply houses or direct from the manufacturer.*

MIDWEST CONCEALED BED CORPORATION

Manufacturers of All Types of Concealed Bed Equipment

CHICAGO OFFICE
Frank H. Johnson & Son,
228 N. LaSalle Street

MAIN OFFICE AND PLANT
EVANSVILLE, IND.
AGENTS IN PRINCIPAL CITIES

PACIFIC COAST PLANT
L. A. Wall Bed Co.,
LOS ANGELES, CALIF.

FEATURES OF MIDWEST CONCEALED BEDS

The Midwest Line of Concealed beds carries the prestige and refinement of twenty-three years of continuous research and development. These pages illustrate and describe a few of the many features developed by this company during its long experience in this field to add to the comfort of concealed beds.

Bed Ends—Art line tubing 1¾ ins. diameter furnished in variety of designs and finishes.

Spring Equipment—Springs are made of high tempered Premier wire tied together with high tempered Premier helicals with ample depth of coils to insure maximum comfort.

Finishes—Standard finishes: Wood brown and hand grained Walnut. Our hand grained wood finishes are beautiful reproductions of natural woods. These artistic finishes represent the handwork of experts. We produce an unsurpassed finish, both in appearance and durability.

Midwest Concealed beds are unusually attractive and durable. In addition to the installations described we manufacture many other distinctly different types that will meet practically any peculiar condition that may arise in the planning of a new building or in the remodeling of an old one.

Catalogue—And full details of the complete Midwest line on application to factory or nearest representative.

MIDWEST JAMB TYPE CONCEALED BEDS

These beds can be pivoted either to right or left of the jamb as the occasion demands, provided there is sufficient pocket depth "C" as shown below.

Details show minimum dimensions which are taken from inside plaster line to face of door based on the use of regular stock door thickness (1⅜ to 1¾ ins.).

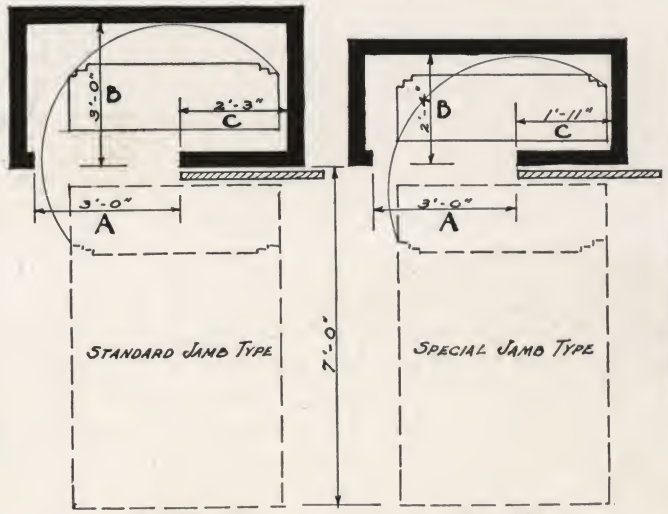
The special jamb type installation has a newly developed mechanism which enables the bed to be concealed in a closet of 8 ins. less depth; see dimension "B."

All jamb and pivoted installations are equipped with four positive legs, so that bed when in lowered position automatically shifts its full weight to floor, thereby relieving head end and pivotal mechanism of all strain.

MINIMUM DIMENSIONS

Standard Jamb Type	
Full size	A 3′– 0″ B 3′– 0″ C 2′– 3″
¾ size	A 2′–10″ B 2′–10″ C 1′–11″
Twin size	A 2′– 8″ B 2′– 8″ C 1′– 7″
Special Jamb Type	
Full size	A 3′– 0″ B 2′– 4″ C 1′–11″
¾ size	A 2′–10″ B 2′– 2″ C 1′– 7″
Twin size	A 2′– 6″ B 2′– 0″ C 1′– 3″

Intermediate size beds furnished on order.



No. 27 No. 38



Full Size Jamb Type Bed

MATTRESS SIZES

Full size	4′ 4″ x 6′ 0″
Intermediate	4′ 1″ x 6′ 0″
Three quarter	3′ 10″ x 6′ 0″
Twin size	3′ 0″ x 6′ 0″

MIDWEST JUNIOR PORTABLE BEDS



No. 42 Portable Junior Bed

The Junior Portable folding bed is an entirely new, convenient and fully equipped bed, with every comfort of the stationary type — plus space saving advantages. Ideal for sleeping porch or spare rooms. Rolled about with ease and is quickly and easily converted into roomy bed or folded for storing in small space.

Sleeping Comfort — Bed is equipped with deep, resilient coil springs, to accommodate a 45 lb. mattress—unusually roomy sleeping surface for folding type bed.

Finger-tip Ease in Operation—Helical top, steel bottom springs—all fold into compact unit. No fastenings to adjust—tension springs control the opening and closing of the bed under slight pressure.

Compact, Light Weight, Easy to Move—No heavy cast iron weights used in construction. Bed is pivoted to a light weight carriage. Casters are 2½ in. easy rolling rubber-tired type to protect rugs and floors. The Junior Portable is so constructed as to permit storage in clothes closet without interference with shelves or clothing.

Junior Portable No. 42 (Full Size)—Equipped with 96 coil helical top spring. Opened: Height head end, 32 ins.; foot end, 23 ins. Width spring is full size bed, 50x72 ins. Top of spring, 19½ ins. from floor. Closed: Height, 47 ins.; depth, 22 ins.; width, 55½ ins.

Junior Portable No. 42-B (Twin Size)—Open 35x72 ins.

Junior Portable No. 41 (Full Size)—Same as No. 42 except equipped with Link Fabric Spring. Top of spring from floor, 15 ins.

Junior Portable Model No. 41-B (Twin Size)—Open, 35x72 ins.

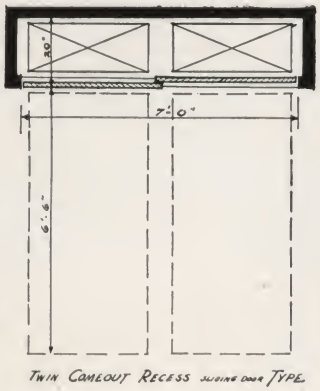
MIDWEST TWIN COME-OUT RECESS BEDS, ROLLING DOOR TYPE

A method of twin bed concealment designed especially for use where only minimum space is available. A special feature of this installation is that the doors may be closed while the beds are in use. Although the space required is small these beds embody all the sturdy features and unusual sleeping comfort of the entire Midwest Line.

Minimum closet depth 20 in. Size of opening 7x7 ft. with two sliding doors each 3 ft. 6½ in. x 7 ft.



Twin Come-Out Recess Installation No. 35, with Beds Concealed



TWIN COME-OUT RECESS SLIDING DOOR TYPE



Twin Come-Out Recess Installation No. 35, Beds Lowered, Recess Closed

MIDWEST PORTABLE CLOSET BEDS—ROLLER TYPE

A scientifically, all-steel-constructed bed designed to occupy a minimum of space, which, being free of all cumbersome mechanism, can be rolled from concealment to desired position in room with but slight effort.

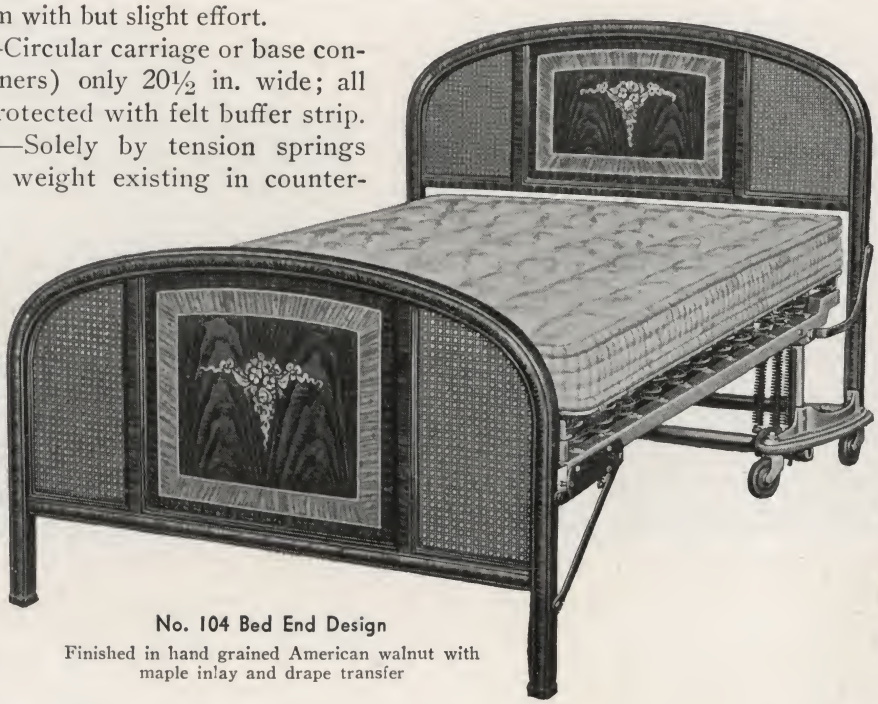
Individual Features—Circular carriage or base construction (no sharp corners) only 20½ in. wide; all contact surfaces fully protected with felt buffer strip.

Exceptional Balance—Solely by tension springs (Eliminating excessive weight existing in counter-balance types).

Automatically Controlled Center Swing Leg—A positive guarantee against jackknifing or folding over of head end when bed is in lowered position.

Ball Bearing Casters—Faultless ball bearing "rubberex" casters, 4-in. diameter, insure easy rolling.

Spring Frames—When raised or lowered, swing well within back line of carriage, insuring against defacement of walls or interior trim.



No. 104 Bed End Design

Finished in hand grained American walnut with maple inlay and drape transfer

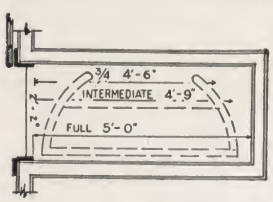


Midwest Bed

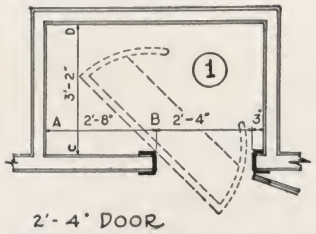
Upright position, showing narrow base only 20½ in. wide

Over-all dimensions of carriage or base of bed

Size bed	Length	Width
Full size.....	4 ft. 10 in.	20½ in.
Intermediate..	4 ft. 7 in.	20½ in.
Three-quarter.	4 ft. 4 in.	20½ in.
Twin.....	3 ft. 7 in.	20½ in.

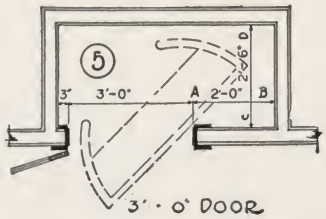


Minimum door width 2 ft. where door opens full back



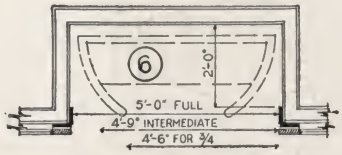
2'-4" DOOR

Minimum depth of closet in combination with a 2 ft. 4-in. door



3'-0" DOOR

Minimum depth of closet in combination with a 3-ft. door



TWO 2'-6" FRENCH DOORS

One pair of 2 ft. 6-in. doors, minimum depth of closet 2 ft.

Note: All dimensions are based on full size beds. On Plans 1 and 5 for intermediate size bed, closet can be 3 ins. less between A and B and 1½ in. less between C and D. For three-quarter size bed, closet can be 6 in. less between A and B and 3 in. less between C and D. All doors 6 ft. 8 in. high.

MURPHY DOOR BED COMPANY

MAIN OFFICE

19 West 44th Street, NEW YORK, N. Y.

OFFICES AND DISPLAY ROOMS THROUGHOUT THE UNITED STATES AND CANADA

For Murphy Kitchens, see Manufacturers' Index

Murphy Products

All styles of Disappearing Beds, including Types "A" and "B" Pivot, Offset Pivot, Recess, Two-door Pivot, Roller and specially designed Concealed Beds for practically all conditions. Murphy Beds are made in standard sizes and are equipped with Single and Double Deck Coil Springs as well as Flat Fabric and Box Springs. Standard size mattresses are adaptable for use with these beds which operate through a 6 ft. 8 in. high door. For special conditions, where door heights are less, spring bottoms can be arranged accordingly.

Write us for catalogues describing our Wood and Steel Kitchens, Ironing Boards, Bathroom Cabinets, "Servettes" and other space-saving conveniences and devices. We are also Eastern distributors for Parson's "Pureaire" Kitchens and "Chefenettes."



Murphy Service for Architects, Builders and Owners

The various Murphy offices are anxious to work with the prospective owner, the architect or builder, in devising a satisfactory method for including Murphy products in any type of building.

This service does not presume to trespass upon the field of the architect or builder. It is offered in the belief that the accumulated experience of architects and builders, recorded in the extensive Murphy files, must be of great value. This service is rendered without charge and without obligation.

Write the nearest Murphy office before completing plans for new buildings or remodeling.

MURPHY PIVOT BEDS

Type "A"

Type "A" Pivot Beds are perfectly balanced at all angles. Head end stands out from the wall and the folding head end holds the pillow securely in place while the bed is in upright position in the closet. This type of bed has a subframe to which arms and sockets are attached which support the bed.

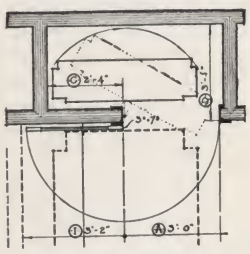
Type "B"

Type "B" Pivot Beds have one-piece head ends with arrangement for holding pillows under mattress clamps when bed is folded in upright position. These beds are balanced with heavy helical springs, are of sturdy construction and economically priced. The one-piece head end permits bringing bed closer to door or wall when let down for use, occupying a minimum of floor space.

Installation No. 1—Bed and Door on Same Jamb



Type "A" Pivot Three Quarter Panel Design



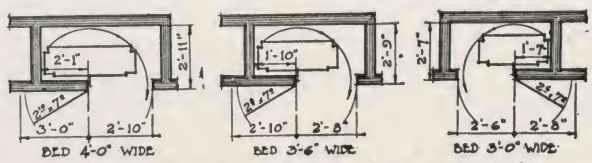
Showing position of door and the bed ready for use. Standard stock door. (See floor plan below.) Door and bed independent of each other.

Minimum closet dimensions for Murphy Pivot Beds, Types "A" and "B."

A Standard full size bed 4 ft. 6 in. wide. Accommodates standard mattress.

Bed can be pivoted to either right or left jamb—provided there is sufficient bed pocket space.

A—Door: width	3'0"
height	6'8" or 7'0"
C—Bed pocket	2'4"
D—Depth of closet inside plaster line to outside plaster line	3'1"

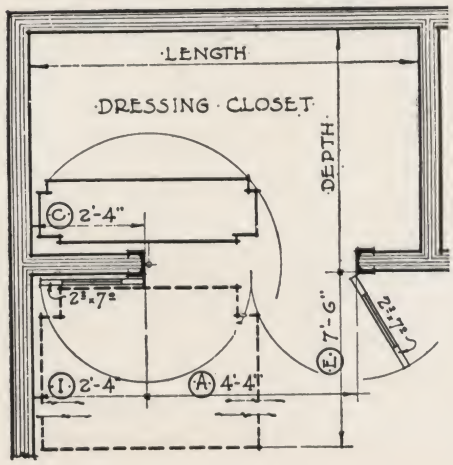


Minimum Closet Dimensions for Other Width Beds

Installation No. 2—Double Door



Type "B" Pivot Open Filler



This installation is used where it is essential to have full entrance to and through dressing closet to bath or other room. (See floor plan below.) Bed independent of doors.

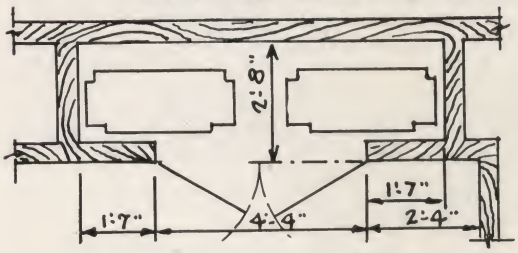
Minimum required dimensions for full size Murphy bed 4 ft. 6 in. x 6 ft. 1 in. in dressing closet, where entry must necessarily be made through bed opening.

A—Doors: width, two	2'2"
height	6'8" or 7'0"
C—Bed pocket	2'4"
E—Bed clearance wall to foot end of bed when lowered in room.	7'6"
I—Door clearance	2'4"

Installation No. 3
Twin Murphy Beds—Both Through Same Opening



In-A-Dor Type, Custom Design No. 17931



Both beds through same opening. Beds independent of doors.

At the left are shown minimum closet dimensions for Murphy Pivot Bed—twin arrangement, for standard 3 ft. 0 in. beds

Installation No. 4
Murphy Recess Type

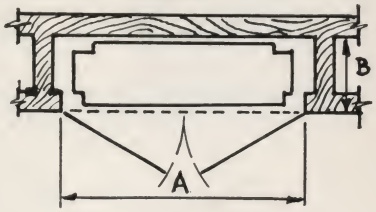


Murphy Recess Bed—Standard Type—Two-piece End

Fastened to floor in shallow recess—lowers straight to floor, does not pivot. When on floor, ready for use, bed is projected forward so head end is in line with door opening.

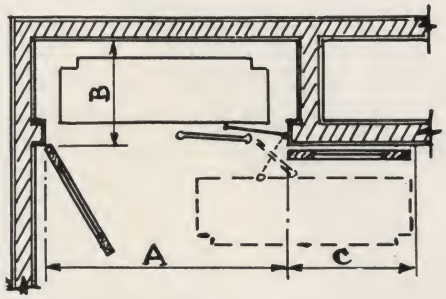
Note: When closet can not be provided, a canopy rod can be furnished which permits concealing bed behind draperies

Width of bed	A	B
4′ 6″	5′ 0″	19″
4′ 0″	4′ 6″	19″
3′ 6″	4′ 0″	19″
3′ 0″	3′ 0″	19″



Installation No. 5—Murphy Offset Pivot Bed



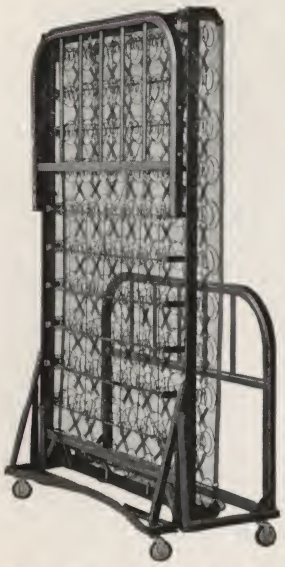


Width of bed	A	B	C
4′ 6″	5′ 0″	1′ 10″	2′ 8″
4′ 0″	4′ 8″	1′ 10″	2′ 6″
3′ 6″	4′ 0″	1′ 10″	2′ 2″
3′ 0″	3′ 6″	1′ 10″	2′ 0″

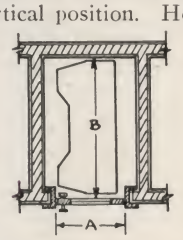
MURPHY ROLLER BEDS

Type "B" Economy Roller Bed

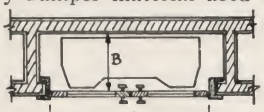
Scientifically designed with a minimum number of working parts. Equipped with special casters having ball bearings on shaft as well as axle, concave rubber tires and improved locking device which holds the foot end firmly in place at all times. Base carriage is only 21 in. deep when bed is in vertical position. Heavy bumper material used on base carriage to avoid marring walls or furniture.



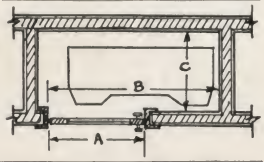
Type "B" Economy Roller Bed



Bed	A	B
4′ 4″	24″	56″
3′ 3″	24″	42″



Bed	A	B
4′ 4″	4′ 8″	24″
3′ 3″	3′ 8″	24″



Bed	Door	B	C	Door	B	C	Door	B	C
4′ 4″	30″	57″	32″	32″	57″	30″	36″	57″	28″
3′ 3″	30″	45″	25″	32″	45″	24″	36″	45″	23″

Type "A" Easy Roller Bed

The Type "A" Easy Roller Bed has a base carriage 23⅝ in. deep with automatic gate-legs which open and close as the bed is lowered and raised, and is of heavier construction than the "B" type throughout. This bed requires closets slightly larger than Type "B" and is manufactured in 3 ft. 3 in., 4 ft. 0 in., and 4 ft. 6 in. widths.

Both Type "A" and Type "B" are stocked in brown enamel and walnut finishes with flat fabric and coil springs. Cane panel ends and three-quarter solid panel ends in special finishes also available.

THE BESSLER DISAPPEARING STAIRWAY CO.

AKRON, OHIO

BESSLER DISAPPEARING STAIRWAY IN WOOD AND STEEL

Bessler Wood Disappearing Attic Stairway

The Bessler disappearing attic stairway is a substantial, sightly and practical flight of stairs for one or two-story residences and other types of buildings, providing proper stair access to an upper floor when desired, and leaving clear the floor space ordinarily occupied by stairs when that is wanted. While not in use, the stair folds into the ceiling out of the way.

The treads are properly secured to heavy string pieces with open risers. The hand rail is strong, practical and attractive. At the top the stairs are attached to the end trimmer of an opening in the ceiling of the room or hall where the stairs are to be located. The mechanism and operation are very simple. To use the stairway a slight pull on a chain brings it into position, with very slight assistance from the operator. *Metal parts are all made of pressed steel.*

The panel is the only part visible when the stairway is closed, and this is flush with the ceiling line. There is no possibility of it coming down unassisted.

All models shown below can be furnished with either pine, oak, birch, gum or chestnut doors with one or two panels, also with flush laminated panel in pine, oak or birch.

Prices and literature furnished on request.

The Bessler disappearing stairway is guaranteed to last as long as the life of the building.

You can have the use of the Bessler for one month, and if it does not prove to be satisfactory, return it to us at our expense.

Specifications Wood Attic Stairway



Model 97

Stairway to be mounted on panel to slide on rollers. Panel to have adjustable hinges permitting edge to come to bottom of plaster. Hand rail for right or left side. One equalizing bar is to be on each side of the stairway. Double-acting spring barrel and spring drum on each side of the stair panel. The weight of the stair-stringers to bear down on the shaft which is attached to end trimmer. Adjustable cable clamps bearing against brackets attached to jambs.

Average shipping weight, 170 lbs.



Model 39

This stairway is same style and made in same sizes as Model 29 illustrated at left except it is made for a 2 ft. 6 in. wide finished opening.

Average shipping weight, 85 lbs.

Model 29

Stairway to be mounted on frame to slide through guides. Panel to be hinged on right or left side. (Mention which side panel is to be on so the proper operating parts can be furnished.) Hinges to be suitable so panel can be installed with edge flush with plaster. Spring drum attached to metal frame underneath stairway. A jointed arm for holding panel open and two coil springs for closing panel. Made in sizes up to 9 ft. 7 in. floor to floor and for finished opening 2 ft. wide

Average shipping weight, 80 lbs.



Model 50

Stairway to be mounted on panel to slide in guides. Hinges to be suitable so panel can be installed with edge flush with bottom of plaster if desired. Hand rail for right or left side. Spring drum on each side of the stair panel at the hinged end. The weight of the stair-stringers to bear down on the guides which are attached to the hinged end of frame.

Note: This model is made for floor to floor heights up to 10 ft. 7 in. only, and for finished openings 2 ft. wide.

Average shipping weight, 90 lbs.





Model 60

Stairway to be mounted on panel to slide in guides. Hinges to be suitable so panel can be installed with edge flush with bottom of plaster if desired. Hand rail for right or left side. Spring drum on each side of the stair panel at the hinged end. The weight of the stair-stringers to bear down on the guides which are attached to the hinged end of frame.

Note: This model is made for floor to floor heights up to 10 ft. 7 in. only, and for finished openings 2 ft. 6 in. wide.

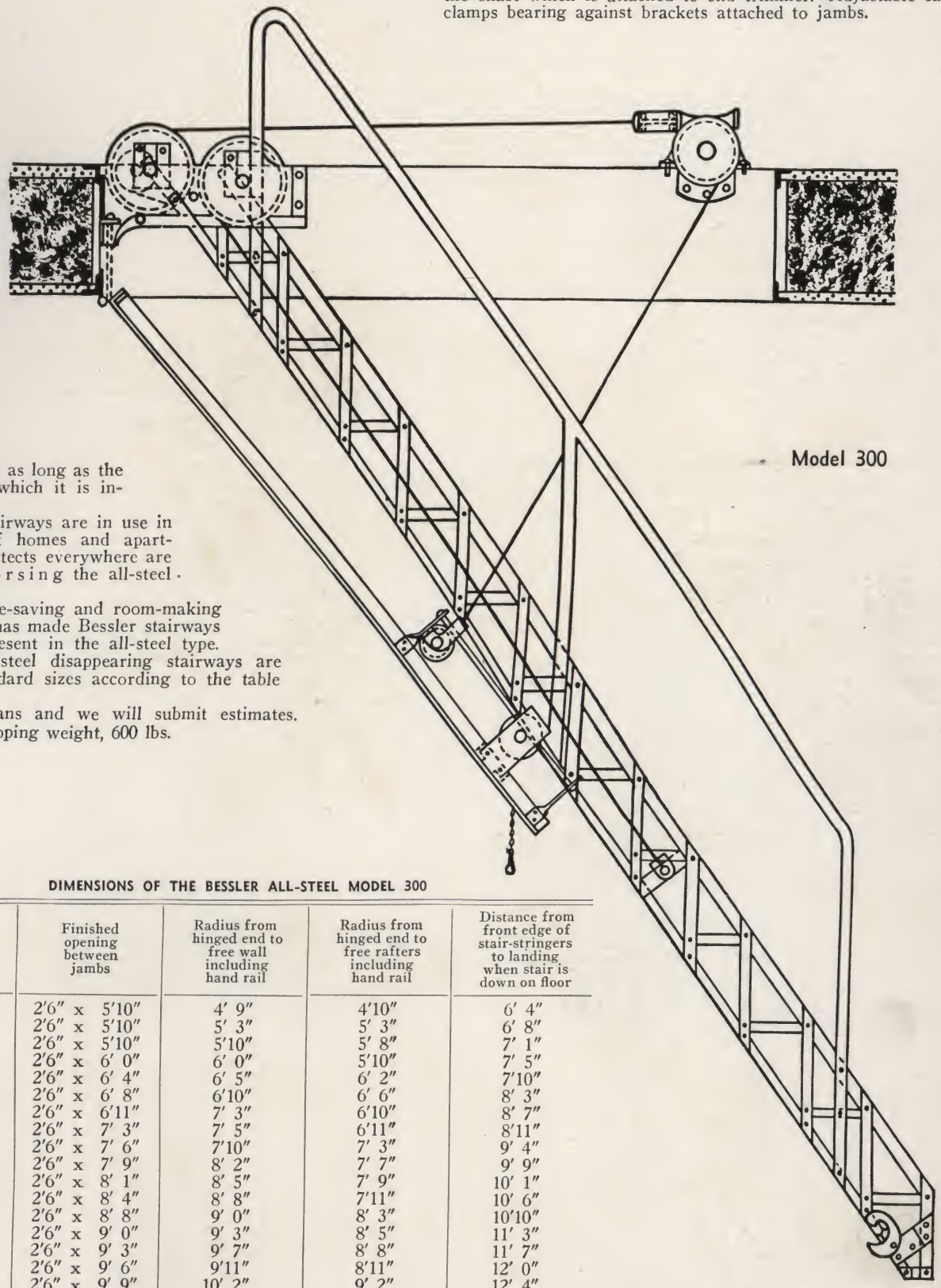
Average shipping weight, 95 lbs.

Bessler All-steel Disappearing Stairway, Model 300

The all-steel stairway is fireproof and burglarproof, and is suitable for use where every hazard must be eliminated and every possible feature of safety must be provided.

Specifications All-steel Stairway

Stairway to be all-steel mounted on panel to slide on rollers. Panel to have adjustable hinges permitting edge to come to bottom of ceiling. Hand rail for right or left side. One equalizing bar is to be on each side of the stairway. Four spring drums, two operate the panel and the other two the stair-stringers. The weight of the stair-stringers to bear down on the shaft which is attached to end trimmer. Adjustable cable clamps bearing against brackets attached to jambs.



Model 300

It will last as long as the building in which it is installed.

Bessler stairways are in use in thousands of homes and apartments. Architects everywhere are highly endorsing the all-steel model.

Every space-saving and room-making feature that has made Bessler stairways famous is present in the all-steel type.

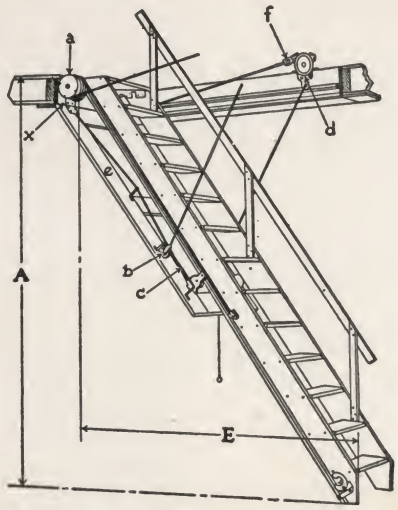
Bessler all-steel disappearing stairways are made in standard sizes according to the table shown below.

Send us plans and we will submit estimates.

Average shipping weight, 600 lbs.

DIMENSIONS OF THE BESSLER ALL-STEEL MODEL 300

Floor to floor height	Finished opening between jambs	Radius from hinged end to free wall including hand rail	Radius from hinged end to free rafters including hand rail	Distance from front edge of stair-stringers to landing when stair is down on floor
7′7″	2′6″ x 5′10″	4′ 9″	4′10″	6′ 4″
8′1″	2′6″ x 5′10″	5′ 3″	5′ 3″	6′ 8″
8′7″	2′6″ x 5′10″	5′10″	5′ 8″	7′ 1″
9′1″	2′6″ x 6′ 0″	6′ 0″	5′10″	7′ 5″
9′7″	2′6″ x 6′ 4″	6′ 5″	6′ 2″	7′10″
10′1″	2′6″ x 6′ 8″	6′10″	6′ 6″	8′ 3″
10′7″	2′6″ x 6′11″	7′ 3″	6′10″	8′ 7″
11′1″	2′6″ x 7′ 3″	7′ 5″	6′11″	8′11″
11′7″	2′6″ x 7′ 6″	7′10″	7′ 3″	9′ 4″
12′1″	2′6″ x 7′ 9″	8′ 2″	7′ 7″	9′ 9″
12′7″	2′6″ x 8′ 1″	8′ 5″	7′ 9″	10′ 1″
13′1″	2′6″ x 8′ 4″	8′ 8″	7′11″	10′ 6″
13′7″	2′6″ x 8′ 8″	9′ 0″	8′ 3″	10′10″
14′1″	2′6″ x 9′ 0″	9′ 3″	8′ 5″	11′ 3″
14′7″	2′6″ x 9′ 3″	9′ 7″	8′ 8″	11′ 7″
15′1″	2′6″ x 9′ 6″	9′11″	8′11″	12′ 0″
15′7″	2′6″ x 9′ 9″	10′ 2″	9′ 2″	12′ 4″
16′1″	2′6″ x 10′ 1″	10′ 6″	9′ 5″	12′ 9″
16′7″	2′6″ x 10′ 5″	10′10″	9′ 8″	13′ 1″



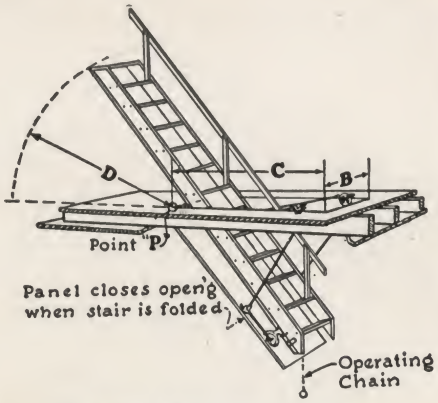
Stairway in Position for Use

Width of finished opening should be exactly as given in the table, $\frac{3}{16}$-in. clearance for panel has been allowed.

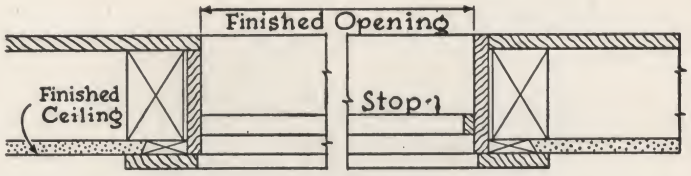
Note: Jambs to extend full depth of opening as shown.

Key for Model 97

a—Spring barrels
b—Cable holders
c—Equalizing bars
d—Pulley brackets
e—Stair panel
f—Lugs
x—Trimmer



Stairway Partly Down on Panel



Section Through Stair Opening

DIMENSIONS FOR VARIOUS FLOOR TO FLOOR HEIGHTS

A—Height from floor to floor	B—Width of finished opening between jambs	C—Length of finished opening between jambs	D—Dimension from upper end of stair stringer to point "P"	E—Distance from front edge of stair stringer to finished jamb
		Model 29		
7′ - 7″	2′ - 0″	5′ - 6″	4′ - 5″	5′ - 6″
8′ - 1″	2′ - 0″	5′ - 6″	4′ - 10″	5′ - 10″
8′ - 7″	2′ - 0″	5′ - 6″	5′ - 2″	6′ - 1″
9′ - 1″	2′ - 0″	6′ - 0″	5′ - 6″	6′ - 6″
9′ - 7″	2′ - 0″	6′ - 0″	5′ - 9″	6′ - 10″
		Model 50		
7′ - 7″	2′ - 0″	5′ - 6″	3′ - 11″	5′ - 6″
8′ - 1″	2′ - 0″	5′ - 6″	4′ - 6″	5′ - 10″
8′ - 7″	2′ - 0″	5′ - 6″	5′ - 1″	6′ - 1″
9′ - 1″	2′ - 0″	5′ - 6″	5′ - 8″	6′ - 6″
9′ - 7″	2′ - 0″	6′ - 0″	5′ - 9″	6′ - 10″
10′ - 1″	2′ - 0″	6′ - 0″	6′ - 5″	7′ - 1″
10′ - 7″	2′ - 0″	6′ - 0″	7′ - 0″	7′ - 5″
		Model 60		
7′ - 7″	2′ - 6″	5′ - 6″	3′ - 11″	5′ - 6″
8′ - 1″	2′ - 6″	5′ - 6″	4′ - 6″	5′ - 10″
8′ - 7″	2′ - 6″	5′ - 6″	5′ - 1″	6′ - 1″
9′ - 1″	2′ - 6″	5′ - 6″	5′ - 8″	6′ - 6″
9′ - 7″	2′ - 6″	6′ - 0″	5′ - 9″	6′ - 10″
10′ - 1″	2′ - 6″	6′ - 0″	6′ - 5″	7′ - 1″
10′ - 7″	2′ - 6″	6′ - 0″	7′ - 0″	7′ - 5″
		Model 97		
7′ - 7″	2′ - 6″	5′ - 10″	4′ - 5″	6′ - 4″
8′ - 1″	2′ - 6″	5′ - 10″	4′ - 11″	6′ - 8″
8′ - 7″	2′ - 6″	5′ - 10″	5′ - 6″	7′ - 1″
9′ - 1″	2′ - 6″	6′ - 0″	5′ - 8″	7′ - 5″
9′ - 7″	2′ - 6″	6′ - 4″	6′ - 1″	7′ - 10″
10′ - 1″	2′ - 6″	6′ - 8″	6′ - 6″	8′ - 3″
10′ - 7″	2′ - 6″	6′ - 11″	6′ - 11″	8′ - 7″
11′ - 1″	2′ - 6″	7′ - 3″	7′ - 1″	8′ - 11″
11′ - 7″	2′ - 6″	7′ - 6″	7′ - 6″	9′ - 4″
12′ - 1″	2′ - 6″	7′ - 9″	7′ - 10″	9′ - 9″
12′ - 7″	2′ - 6″	8′ - 1″	8′ - 1″	10′ - 1″
13′ - 1″	2′ - 6″	8′ - 4″	8′ - 4″	10′ - 6″
13′ - 7″	2′ - 6″	8′ - 8″	8′ - 8″	10′ - 10″
14′ - 1″	2′ - 6″	9′ - 0″	8′ - 11″	11′ - 3″
14′ - 7″	2′ - 6″	9′ - 3″	9′ - 3″	11′ - 7″
15′ - 1″	2′ - 6″	9′ - 6″	9′ - 7″	12′ - 0″
15′ - 7″	2′ - 6″	9′ - 9″	9′ - 10″	12′ - 4″
16′ - 1″	2′ - 6″	10′ - 1″	10′ - 2″	12′ - 9″
16′ - 7″	2′ - 6″	10′ - 5″	10′ - 6″	13′ - 1″

FARLEY & LOETSCHER MFG. CO.

Ceiling Suspended Disappearing Sliding Stairways

DUBUQUE, IOWA

Products

The "Presto" and "Victor" Disappearing Sliding Stairways.

Also Sash, Doors, Blinds, Frames, Mouldings, Interior Finish, Stair and Cabinet Work; Qualitybilt "In-the-Door" Ironing Boards.

For "Weatherseal" Fold-up Garage Doors, "Qualitybilt" Veneered Doors and "Farlite" Pre-finished Doors, see Manufacturers' Index.

Presto and Victor Disappearing Stairs

"Presto" and "Victor" sliding disappearing stairways are strong, rigid and non-collapsible. They are pleasing in appearance and made for installation in any type of building where access to an upper floor is desired without the loss of floor space required for a stationary stairway. These sliding stairways, when not in use, roll up through an opening in the ceiling entirely out of view, leaving the space below clear for any desired use. The space thus saved is often sufficient for a bathroom or generous closet. Treads are housed into stringers and rigid hand rail is firmly attached to either string. One end of ceiling door is fastened to well hole and overbalancing of stairway when up keeps this door tightly closed.

Operation—Both stairways operate the same, as they slide up and down on roller brackets attached to the ceiling door. The weight of the stairs and ceiling door are counterbalanced by springs. The "Presto" being much heavier is equipped with powerful springs, which wind steel cables on twin drums. The "Victor" is counterbalanced with two long coil springs only, as it is lighter in weight. There is no possibility of either stairs coming down unassisted. When closed, nothing but the ceiling door is visible from below.

Shipping and Weights

Shipped in dustproof cartons. Complete instructions for installing included. Shipping weight of the "Presto" approximately 175 lbs.; of the "Victor" approximately 110 lbs.

PRESTO AND VICTOR STAIRS FOR VARIOUS CEILING HEIGHTS

See diagram below for key to measurements

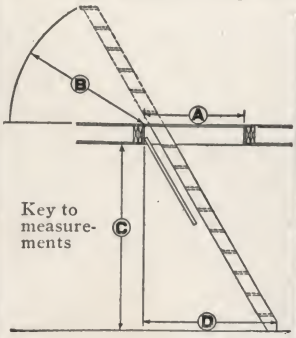
C Ceiling heights	D Projection into room when stair is down	B Projection into attic when stair is up	A Size of finished opening
The "Presto"			
7′ 6″ to 7′ 11″	7′ 2″	4′ 11″	2′ 6″ x 6′ 3″
8′ 0″ to 9′ 0″	7′ 6″	5′ 8″	2′ 6″ x 6′ 3″
9′ 1″ to 10′ 0″	8′ 1″	6′ 3″	2′ 6″ x 6′ 11″
10′ 1″ to 10′ 11″	8′ 10″	6′ 11″	2′ 6″ x 7′ 3″
11′ 0″	9′ 1″	7′ 5″	2′ 6″ x 7′ 6″
The "Victor"			
7′ 4″	5′ 0″	4′ 6″	2′ 4″ x 4′ 6″
7′ 6″	5′ 3″	5′ 3″	2′ 4″ x 4′ 6″
8′ 0″	5′ 7″	5′ 9″	2′ 4″ x 4′ 6″
8′ 6″	5′ 10″	6′ 6″	2′ 4″ x 4′ 6″
9′ 0″	5′ 10″	6′ 6″	2′ 4″ x 4′ 6″

Literature

Illustrated folders and complete prices furnished on request. Address Department S-33.



The Presto



Guarantee

Qualitybilt Disappearing Stairways are guaranteed to last as long as the building. If any stairway does not prove satisfactory when properly installed it may be returned to us within 60 days at our expense and the full purchase price will be refunded.



The Victor

The Presto (Patented)

The "Presto" is of high grade construction throughout with wide treads and stringers. Very rigid and substantial, built for the most severe usage. The large ceiling panel permits of taking bulky objects through opening. The operation is controlled by heavy steel cables, winding on powerful spring drums which counterbalance the weight of the stair and ceiling door and assist in the rolling of stairs up through the opening.

Specifications—Stairs complete include 1⅛-in. ceiling panel door, one flight of stairs with rigid hand rail and supports, all necessary *pressed steel* hardware, black japanned finish, two heavy spring drums and galvanized wire rope. Stringers are yellow pine, ¾x7¼ in. housed to receive 7-in. treads. Three reinforcing cross rods under treads. Stair stained serviceable brown, ceiling door not stained. No jambs or trim included. These furnished only as extras to match other room trim.

The Victor (Patented)

A serviceable, moderately priced stairway with simple but efficient hardware and especially adapted to limited spaces, as the ceiling door is smaller and stairs do not project so far into the room or hall as does the "Presto." Well built and gives good service. Rolls into attic on brackets attached to ceiling door. Does not require spring drums or cable. Sliding operation is controlled by an ingenious arrangement of friction brake on a control cord which prevents the stair from sliding down without a gentle pull, but does not interfere with raising it.

Specifications—Stairs complete include 1⅛-in. ceiling panel door, one flight of stairs, rigid hand rail with supports and complete hardware, black japanned. Stringers are yellow pine, ¾x4 in., housed to receive ¾x5-in. treads. Stairs stained dark brown. No jambs or room trim included, furnished only as extras to match other room trim.

FRAZIER STAIR COMPANY, INC.

Manufacturers of Self-balanced Disappearing Stairs*

1817-1819 Banksville Avenue, PITTSBURGH, PA.

SOLD BY LUMBER AND SUPPLY DEALERS EVERYWHERE

FRAZIER SELF-BALANCED* DISAPPEARING STAIRS



Opening the Panel

FRAZIER

TRADE-MARK REG. U. S. PAT. OFFICE

Frazier Self-balanced Disappearing Stairs were designed to provide unusually sturdy construction, easy operation and maximum safety to the user. At the same time the designer, a contractor for many years, sought to eliminate those features of the usual type of disappearing stairs, which his experience showed caused difficulties in installation and operation. That the designer was successful is demonstrated by more than 5000 installations of Frazier Stairs in all parts of the country.

Frazier Self-balanced Disappearing Stairs are protected by Patent No. 1633321 and other patents pending.

Features

An examination of the illustrations will indicate the outstanding advantages of Frazier Stairs which distinguish them from the usual type of disappearing stairs.

The Frazier Stair is the only complete stair made. As shown, the ceiling panel, hardware and operating device are shipped *completely assembled in the jambs* ready for mounting in the rough opening. This eliminates entirely assembling on the job with the attendant possibilities of error or improper installation.

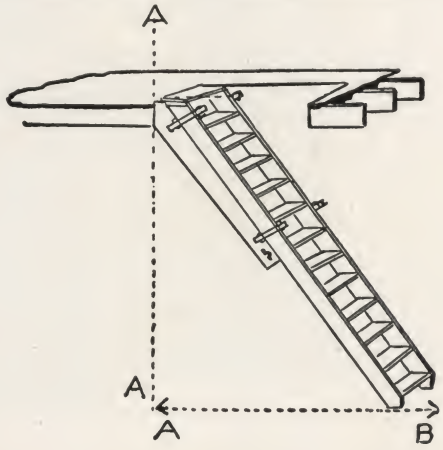
The jamb can be furnished in any depth to suit the requirements of the thickness of the joist, floor and ceiling construction. To install it is only necessary to nail the jamb in the opening taking care that the door panel can move freely.

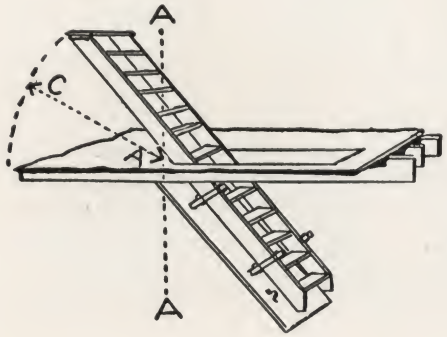
As soon as the jamb has been nailed into place the stairs are inserted in the guide rollers, the ring on the controlling device is attached to the hook on one of the treads and the stair is ready to operate.

An unusual and important advantage of Frazier Stairs is the self-balancing feature which makes the stair easy to operate and eliminates entirely any weights or pulleys. This is described below.



Releasing the Lock





DIMENSIONS

Model No.	Regular series Rough opening space, in.	Jumbo series	Floor to floor height	Run downstairs dimensions A to B, in.	Operating radius dimensions A to C, in.	Shipping weight
0	26½x48½	30½x48½	7 ft. 10 in. to 8 ft. 2 in.	53	62	Assembled, 125 lbs. K. D. flat, 100 lbs.
1	26½x50½	30½x50½	8 ft. 2 in. to 8 ft. 7 in.	55	64	
2	26½x50½	30½x50½	8 ft. 7 in. to 8 ft. 11 in.	62	67	
3	26½x52½	30½x52½	8 ft. 11 in. to 9 ft. 2 in.	60	70	
4	26½x52½	30½x52½	9 ft. 2 in. to 9 ft. 7 in.	60	72	
5	26½x57½	30½x57½	9 ft. 7 in. to 10 ft.	66	78	

Note: In ordering stairs specify exact floor to floor height, and also size of ceiling joist. Be sure to state floor to floor height and joist size (not floor to ceiling). In framing opening two dimensions must be considered to provide sufficient operating space. 1—Run on floor below. 2—Operating radius under roof. Reference to table of measurements shows exact dimensions required by various models.

*Copyrighted.

Hardware

The hardware on the Frazier Stair is most important as it is unique in design and is largely responsible for the sturdy construction and easy operation of the stairs. All hardware is of cold rolled steel with japanned finish. No hardware appears on under side of door.

The door panel is attached to the jamb by two concealed hinges (see illustration). Each hinge is ⅛ in. thick, 2 ins. wide, by 6½ ins. long, with a steel pin at one end which fits into a socket countersunk in the jamb. The flat arm of the hinge is fastened to the door panel by five screws and, because of its length, serves as a stiffener for the joint between the rail and the stile.

The stairs slide up and down in two sets of specially designed roller guides which are fully patented and are exclusive with Frazier. The flange of the rollers is beveled to prevent binding of the stair stringer, and a shoulder on the other side of the roller eliminates any possible binding of the roller against the bracket.

To prevent the panel from being opened beyond the safe operating point a stay hinge is attached to the panel and the jamb.

To hold the stair in position on the panel there is an operating catch which must be raised by hand before the stairs will slide down to the floor for use. There is also a stop which prevents the stairs from being raised beyond the proper operating point.

Of utmost importance is the controlling device which facilitates the movement of the stairs up or down through the guide bracket rollers. This consists of a drum carrying a steel tape ¾ in. wide and mounted on a spring controlled roller. The spring is carefully adjusted by hand to a predetermined tension which exactly counterbalances the weight of the stairs. This device has nothing to do with the operation of the panel and is only used to make the movement of the stairs through the guides as easy as possible. It is this device together with the self-balancing feature which make the Frazier Stair unusually easy to operate.

Materials and Construction

All material used in the construction of the Frazier Stair is the best obtainable for the purpose and the construction is the finest. There is nothing flimsy about these installations; they are designed and built to give long and satisfactory service even under unusual severe conditions of use.

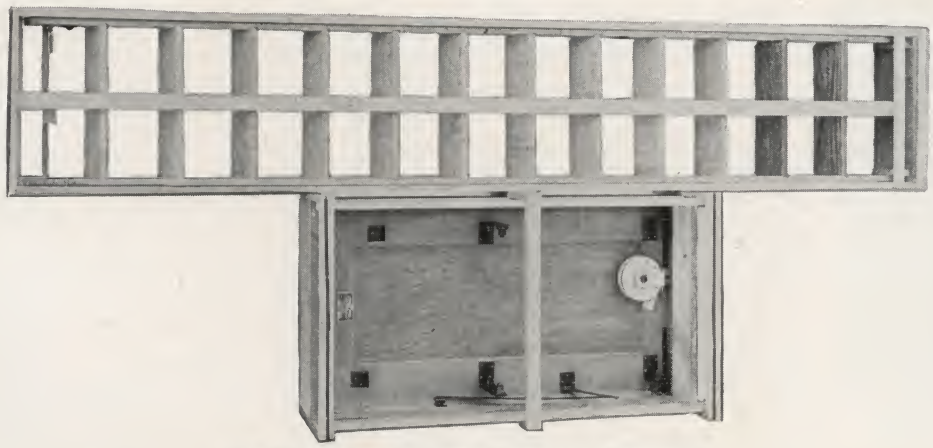
The stairs are made of clear stock white pine with solid springs $1\frac{3}{8}$x$4\frac{5}{8}$ ins., without grooves or slots. Treads are $1\frac{3}{16}$x$5\frac{5}{8}$ ins., set into the strings and securely nailed with two 8d common nails.

Door rails are of white pine 1 in. thick furnishing a firm bed for the screws of the hardware, none of which is attached to the panel. Panel is of fir suitable for any finishing but panels of other woods can be supplied upon specification. Hand rails can be furnished at small additional cost when especially ordered.

Silk pull cord is attached to each door.

Operation

Due to the self-balancing feature the Frazier Stair is one of the easiest to operate as well as one of the safest types of disappearing stairs. A slight pull on the cord brings the stair down into a position from which the release device may be reached readily. This device, which holds the stairs in position on the panel, is so arranged that the operator must necessarily grasp the cross bar at the foot of the stairs and the release handle at the same time. Pressing the handle releases the catch and a slight pull on the bar lowers the stairs to the proper point, and the weight of the stairs holds them in position.



The Frazier Stair Is Shipped Completely Assembled

After removing the wood crates the jamb assembly and stairs are ready to install without further adjustment

To return the stairs to the upper floor the operator lifts the bar and slides the stairs up on the panel until they are automatically locked in position. The control device assists in this operation so that there is very little effort required. When the stairs are locked on the panel the overhanging weight of the upper part of the stair balances and closes the door.

Shipping

In order to protect the unit during shipment the jamb assembly is lined with white oak paper. Assembled stairs are shipped in wood crates with steel band strapping. Knock-down stairs are shipped in heavy cartons bound with steel strapping. All stairs will be shipped assembled unless the K. D. flat stairs are specifically ordered. Stairs are shipped with all adjustments such as spring tension, etc., made at the factory. *No adjustments whatever need be made by the erector.*

Guarantee

The Frazier Stair Company fully guarantees all materials and workmanship in the Frazier Self-balanced Disappearing Stairs and will replace without charge any part proving defective under normal usage within a period of ten years.

Models and Service to Architects

The various models listed are all constructed in the same thorough manner and differ only in dimensions. In nearly all cases one of these models will be found suitable for standard installation. However, if none of these seem to meet the requirements of the architect we will be glad to co-operate in the preparation of special styles or types as may be necessary. Architects are cordially invited to consult our service department at any time.

Architects Installing Frazier Stairs

L. Percival Hutton, Leesburg, Va.
Howard P. Sterling, Pittsburgh, Pa.
J. Bedford Wooley, Philadelphia, Pa.

ALL-STEEL-EQUIP COMPANY

INCORPORATED

GENERAL OFFICES AND FACTORY

150 Griffith Avenue, AURORA, ILL.

NEW YORK, N. Y., 56 West 22nd Street

CHICAGO, ILL., 326 South Jefferson Street

BRANCH AND SALES OFFICES IN PRINCIPAL CITIES

Products



Type 9000
Single Tier Locker
(section of two)

STEEL LOCKERS of all kinds.

STEEL STORAGE and WARDROBE CABINETS for every purpose.

STEEL BOOK SHELVING.

HOSPITAL and INSTITUTIONAL STEEL STORAGE EQUIPMENT.

Engineering and Follow-up Service

A-S-E Engineers are available to architects, providing an experienced and intelligent consulting and design service. Branch offices offer a complete follow-up service at all times.

Company

ALL-STEEL-EQUIP COMPANY has been established for 20 years; is a national concern that has pioneered the development of modern steel equipment, and sincerely believes in maintaining the highest possible standards of appearance, design, materials and construction.

Acceptance

As indication of the satisfactory performance of A-S-E products, a few of the locker users are listed:

New York University, New York, N. Y.

Mercy High School, Chicago, Ill.; High School, Billings, Mont.

U. S. Military Academy, West Point, N. Y.

Walnut Hills High School, Cincinnati, Ohio; High School, San Antonio, Tex.

Girl's Trade School, Milwaukee, Wis.; Crestmont Country Club, West Orange, N. J.

Northmoor Country Club, Chicago, Ill.

Lockers

A-S-E Lockers are provided in many types and sizes, including: Single Tier, Double Tier, Triple Tier, Two-Person, Box Lockers, Compartment, and Golf. Key Cabinets, Basket Racks, Baskets, and Special Equipment are also provided.

Golf Locker Equipment

Coat rod; comb tray and towel rod; adjustable mirror; ball trays; small shelves; private locked compartment; shoe drawer; umbrella clip and drip pan. All or any of this equipment may be included.



Type 9004 Golf Locker

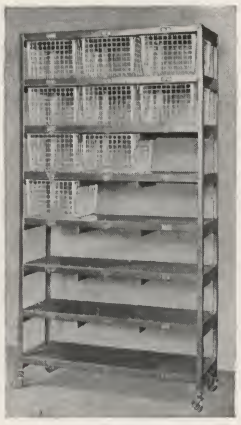
Width, in.	Depth, in.	Height, in.
24	18	60
24	21	60
24	18	72
24	21	72

Compartment Lockers

Box Lockers may be combined with single or double tier lockers in any combination, the only requirement being that total height conforms to standard 60 or 72 in.

Special Locker Equipment

6-in. Sloping Tops; Extra Shelves; Special Locks; Special Finishes; Closed Bases; Coat Rods; Vertical Partitions; Special Ventilation; Special louver arrangement.



Type 9005
Basket Rack

A-S-E Locker Specifications

General—A-S-E Lockers are made from hot rolled, annealed steel—free from buckle or scale. Doors are of box annealed, cold rolled, patent leveled sheets.

Doors—One piece of No. 16 gauge steel—double flanges on vertical edges, cross flanges at top and bottom. Doors 18 in. or more in width reinforced by steel panel between sets of louvers.

Frame—Full 1⅛-in. steel angle uprights; cross members No. 16 gauge steel channel. Corners riveted with 2 countersunk (flush) rivets.

No notches cut in angles for hinges.

Body—No. 24 gauge steel throughout.

Hinges—Special flush hinges, completely concealed pin type, embossed in metal of door. Attached to frame by two countersunk (flush) rivets.

SINGLE TIER LOCKERS

Width, in.	Depth, in.	*Height, in.	Width, in.	Depth, in.	*Height, in.	Width, in.	Depth, in.	*Height, in.
12	12	60	18	18	60	15	15	72
12	15	60	18	21	60	15	18	72
12	18	60	12	12	72	18	18	72
15	15	60	12	15	72	18	21	72
15	18	60	12	18	72			

Also built in other acceptable widths and depths in multiples of 3 in. *Heights given do not include 6-in. legs, use of which is optional. Double Row Lockers not made for depth greater than 18 in.



Type 9001
Double Tier Locker
(section of four)



Type 9006
Two-person Locker
(without legs)



Type 9003
Compartment Locker

DOUBLE TIER LOCKERS

Width, in.	Depth, in.	Height, in.	Width, in.	Depth, in.	Height, in.
12	12	36	12	12	42
12	15	36	12	15	42
15	15	36	15	15	42

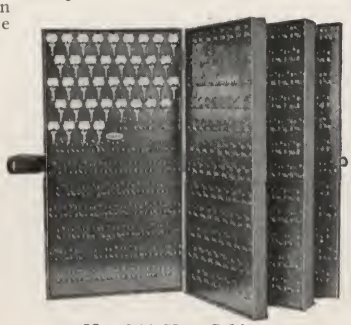
TWO-PERSON LOCKERS

Width, in.	Depth, in.	Height, in.
15	15	72
15	18	72
15	21	72

Also built in other acceptable widths and depths in multiples of 3 in.



Key Hook and Label



No. 966 Key Cabinet



Type 9000
Single Tier Locker
Recessed—with Finishing Strip

Latch—Automatic lift type. One piece $\frac{9}{64}$x½ in. steel band moving vertically, concealed behind flange of door, but accessible. Remains in raised position when door is open, and latches automatically as it is closed. Engages at three points on single tier and two points on double tier. Latching fingers and handle *riveted* to latch bar.

Hooks—Cast iron, ball point, cadmium plated. Single prong side hooks—double prong ceiling hooks on special order.

Finish—A-S-E olive green, French grey, school furniture brown, standard colors. Other colors on order. All parts thoroughly cleaned, then enameled and baked at high temperature. All locker fronts given two coats sprayed lacquer. Highest quality enamels and lacquers used.

Number Plates—Polished brass. Numbers ½ in. high etched and filled with black enamel.

Shelves—Flanged on all four sides, with return flange at front, for greater strength and smoothness. Approximately 9 in. from top in single tier lockers. Not furnished in double tier unless specially ordered.

Tops—Individual. Flanged on all four sides. Sides of locker flanged up over tops.

Bottoms—Flanged on all four sides. Front formed to fit inside of and rest on bottom frame member. Bottom flush with frame.

Sides—Offset at front and back to fit inside of frame angle and back flange. Top flanged to fit over edge of locker top.

Backs—Edges flanged to fit around sides of locker.

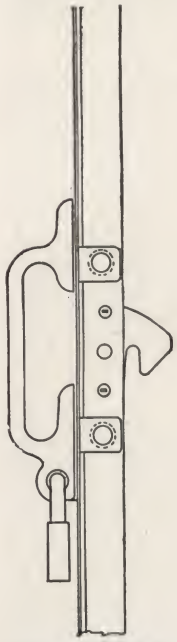
Handles—Malleable iron, smooth, shaped to fit the hand. Riveted to latch bar. Padlock attachment an integral part of handle.

Ventilation—Standard ventilation feature consists of louver perforations 5x⅞ in. Single tier lockers have set of 6 at top and bottom of door. Double tier types have sets of 3 at top and bottom. Full length louver or ½ in. round hole perforations, on 1½ in. centers on order.

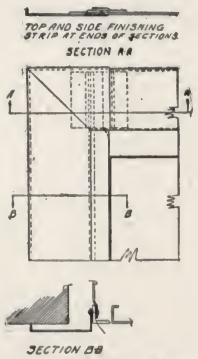
Standard Equipment—Number plates, padlock attachment, 3 coat hooks (more in larger sizes), hat shelf in single tier lockers. Double tier lockers have same equipment but no hat shelf unless specially ordered.

Finishing Strip—3 in. standard width. Built to length of locker rows, with neatest overlapping slip joint for adjustment to length. *No* bolt or rivet heads showing.

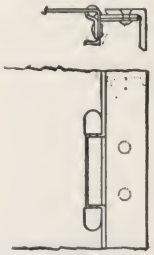
Locks—The standard lock is a disk tumbler, grooved key type, masterkeyed. Two keys furnished and master keys. Any desired type of lock or padlock can be furnished on order.



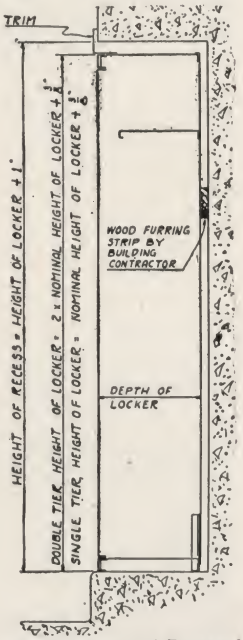
Detail of Padlock Attachment with Padlock



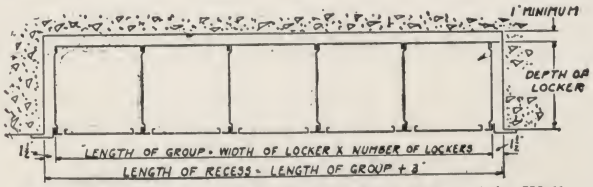
Detail of Finishing Strip



Detail of Hinge

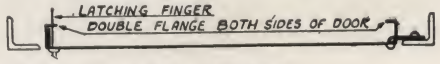


Side Elevation of Recessed Locker Showing Molding and Amount of Recess Space Necessary



Floor Plan Showing Single Row Lockers Recessed in Wall

Detail Showing Double Flange on Door



Details, Elevation and Plan of Lockers

Rubber Silencers—Rubber silencing equipment furnished on all single and double tier lockers.

Shipment—Shipped completely assembled or knocked down.

Basket Rack

Made to accommodate: 9x13x8 in. or 12x13x8 in. baskets; single or double faced racks with or without casters.

Baskets—Baskets are made in either perforated steel or tinned wire construction; padlock attachments, number, and name plates if desired.

Box Lockers

Used in gymnasiums, swimming pools, etc. Unit type with strongly riveted frame and reinforced doors. Brass knob, padlock attachment and number plates standard equipment. Can be supplied with locks.

Sizes—Any combination of standard widths and depths of 12, 15, 18, 24 in. and same heights, so arranged to make total number of lockers conform to standard 60 and 72-in. lockers.

Key Cabinet

Keeps large numbers of keys safe, orderly, and quickly identified. The system is simple and dependable. Cabinets 18¼ in. wide, 34¼ in. high, capacities 102 to 612 hooks, each holding one to four keys. 102 hooks to each "leaf" of steel. Leaves are mounted in heavy steel sections, the number depending on the number of keys to be stored. Sections open like a book and lock shut with strong hasp and padlock. Numbered labels and padlock are furnished with each cabinet. Cabinet provided with screw holes for mounting on wall. (See illustrations at bottom of opposite page.)

Cabinets

A-S-E manufactures two lines of cabinets—the "Master" and the "Popular." In these two lines 52 models are included—storage, wardrobe, combination, desk and counter high, tabulating card, glass door—in fact, cabinets to meet every need.

"Master" Line—Provides the finest construction features known. Nothing has been spared to provide splendid appearance, efficient arrangement, and the ability to withstand years of use.

Selected steel used throughout. All members strengthened by flanging or embossing. Overlap at corners for greater rigidity. Frame is 16-gauge steel in channel formation. Cross members welded to vertical pieces. Exceptionally rigid. Doors are heavy gauge with panel reinforcement full length, welded on. Rabbetting all around prevents entry of dust or vermin. Base is completely enclosed. Sliding domes protect floors.

Hinges are specially heavy—offset to permit swinging doors completely clear of door opening. Vault type, modern design, chromium plated handles. 3-point latch. Lock is disk tumbler, grooved key type, chromium plated. Attached without bolts. Number on keys and front of lock. Shelves flanged back and sides; front flanged down, back and up for strength and appearance. Easily adjusted on 1½-in. centers. Olive green, standard finish. Baked enamel base coat with two coats of high grade lacquer. White, French grey, or perfectly reproduced mahogany or walnut grained finishes are also furnished to order. Shipped set up unless otherwise specified.



No. 3489 Wardrobe Cabinet
36x18x78 in.

SIZES AND MODELS—"MASTER" LINE

W	D	H		
42	x24	x78	"	Stge. Wdbe. Comb.
42	x18	x78	"	Stge. Wdbe. Comb.
36	x24	x78	"	Stge. Wdbe. Comb.
36	x18	x78	"	Stge. Wdbe. Comb.
24	x24	x78	"	Stge. Wdbe. Single Door
24	x18	x78	"	Stge. Wdbe. Single Door
24	x15	x66	"	Stge.
18	x18	x78	"	Stge. Single Door
36	x24	x42	"	Stge.
36	x18	x42	"	Stge.
18	x20	x30½	"	Stge.



Glass Door Cabinet Recessed in Wall
(For other Glass Door Cabinets—see next page)



No. 3688 Combination Cabinet
36x18x78 in.



No. 5856 Glass Door Cabinet
24x15x66 in.



No. 2887 Storage Cabinet
18x18x78 in.

"Popular" Line—Where a strong, neat-looking cabinet is desired at the lowest possible price, A-S-E "Popular" cabinets are the answer. As in the "Master" cabinets, all members are strengthened by flanging or embossing. Overlap at corners gives great rigidity. Frame is full ⅛ in. thick steel angle uprights, with 16 gauge channel cross members at top and bottom, riveted to uprights with flush rivets. Doors are heavy gauge with full length panel reinforcements. Hinges are completely concealed pin type—no bolts or rivets showing. Modern design vault type chromium plated handles are strong and good-looking. Doors latch securely at top, center, and bottom. Lock is disk tumbler grooved key type, chromium plated. Heavy flanged shelves easily adjusted on 1½ in. centers. Baked enamel with sprayed lacquer finish in olive green, or choice of colors, including walnut or mahogany grained finishes. Shipped set up unless otherwise desired.

Special Inserts and Equipment—Unit shelving and inserts, such as file drawers, private compartments, document files are provided.

SIZES AND MODELS "POPULAR" LINE

W. D. H.
36x24x78 in. storage, wardrobe, combination
36x18x78 in. storage, wardrobe, combination
36x12x78 in. storage
36x18x66 in. storage
24x18x66 in. storage, wardrobe
24x15x66 in. storage
18x18x66 in. storage; single door



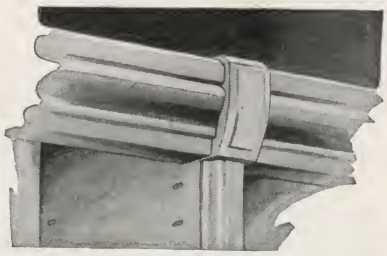
Patrician Shelving

Patrician Shelving

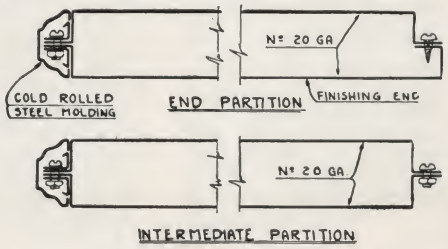
This new book shelving designed by A-S-E is totally different from ordinary metal "racks." The double wall construction gives exceptional rigidity. The proportions and design of cornice and molding provide a rich, handsome effect.

For schools, doctors' offices, law offices, libraries, and the home, Patrician Shelving is unequalled. Can be used as a single unit, or in combinations to hold thousands of books. Units can be added as needed.

Construction—Each unit consists of top, bottom, back, two sides and 4 to 6 shelves. Unless recessed in wall, each section, of one or several units, requires two finishing ends. Shelves are flanged at all four sides, with double flange at front and back. Shelves are adjusted on one-inch centers by the simplest, most secure adjustment yet devised. Nothing can slip. Base around each unit is 6 in. high—closed all around for cleanliness. Each unit has back flanged at sides, top and bottom. Cornice and molding are used to trim front edges of top and sides, joining at neat corner piece.



Cornice, Molding and Corner Piece—All Designed to Give an Attractive Appearance



Sketch of End Construction. Double Wall Provides Unequalled Rigidity and Strength. Ends, Sides and Molding Join Without Exposed Bolts

Finish—All parts are thoroughly cleaned and given baked on enamel coat—then hand sprayed with two coats of high grade lacquer. There is a wide choice of tones: Olive green, autumn brown, standard colors; wood finishes in walnut or mahogany.

SIZES

Single faced units			Back to back		
Width, in.	Depth, in.	Height, in.	Width, in.	Depth, in.	Height, in.
36	10	66	36	19	66
36	10	78	36	19	78
36	10	90	36	19	90

All dimensions are outside. Book space per shelf, 33½ in. Clear depth of shelf 9 in.

Store Shelving—Patrician Store Shelving greatly improves the appearance of the store or shop and permits display of products to best advantage. Can be adjusted to suit varying needs. The special double wall construction provides great rigidity and strength.

Patrician Shelving is supplied in 15 in. depth for Store Shelving.

Hospital Cabinets

A-S-E steel cabinets of built-in and wall type construction are made for virtually every need of hospital, sanatorium, doctor's office, institution, etc. The completeness of this line permits the selection of the correct cabinet.

Glass Door Cabinets—Hospital use requires many glass door cabinets. These are provided in numerous styles and sizes. Can be recessed or wall type. (See previous page for other glass door cabinets.)



Instrument Storage Cabinets



Dressings Cabinet

Construction—A-S-E hospital cabinets are made in the famous "Master" or "Popular" types, as previously described, or in special construction, to architects' specifications.

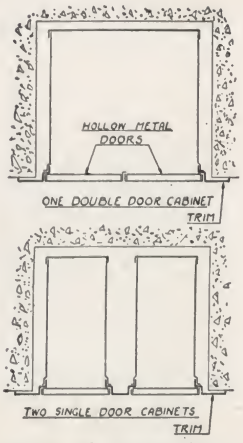
Finishes—Heavy baked on enamel with hand-sprayed lacquer finish in choice of colors. Photographically reproduced finishes in grained walnut or mahogany effect are also obtainable. These are particularly attractive in appearance.

Sizes—Cabinets can be built to meet any size requirements.

Engineering Service—A-S-E Engineers have had long experience with this work, and their services are available to architects to assist in planning layouts.

Installations—Some of the leading institutions that are A-S-E equipped:

St. Luke's Hospital, Chicago, Ill.
U. S. Veterans Home, Danville, Ill.
Lenox Hill Hospital, New York, N. Y.
Roosevelt Hospital, New York, N. Y.
Soldiers & Sailors Home, Alamosa, Colo.
Billings Memorial Hospital, Chicago, Ill.



Detail of Double Door Cabinet, and Single Door Cabinets Recessed in Wall



Diet Kitchen Cabinets



Blanket Cabinets

THE BERGER MANUFACTURING CO.

DIVISION OF REPUBLIC STEEL CORPORATION

Manufacturers of Steel Office Furniture, Lockers, Shelving and Storage Cabinets

CANTON, OHIO

BRANCHES

BOSTON, MASS. CHICAGO, ILL. CLEVELAND, OHIO DETROIT, MICH. LOS ANGELES, CAL. MINNEAPOLIS, MINN. NEW YORK, N. Y. PHILADELPHIA, PA. SAN FRANCISCO, CAL. ST. LOUIS, MO.

EXPORT DEPARTMENT: CANTON, OHIO

Products

STEEL LOCKERS.

Also Shelving, Storage Cabinets, Wardrobes, Filing Cabinets, Desks, Vertical Plan Files and Light Weight Fireproof Safes.

BERLOY

Berloy Locker Specifications

Material—Doors and door frames of best two-pass deoxidized stretcher leveled sheet steel. Other parts made from a good grade mild annealed cold rolled and roller leveled steel. All steel free from buckle scale and other imperfections.

Doors—Formed from one sheet not less than 20 gauge, with one filleted tubular reinforcement at inner edge of door and two filleted tubular reinforcements at outside edge to provide for sufficient torsional strength and rigidity.

Frames—All parts of channel formation securely riveted together. Upright members 18 gauge and cross members 16 gauge steel. Upright members form a continuous strike for door.

Latching Device—Doors are provided with a positive automatic gravity type latching device. Latching lugs, keepers and lift handle of heavy gauge formed steel. Handle, black enameled with padlock attachment.

Body—Of 24 gauge steel with necessary formation to make rigid locker.

Finish—Standard neutral green enamel. Other colors at reasonable cost. Coat hooks, cadmium plated. Bolts and nuts, parkerized. All outside bolt heads are slotless type.

Hinges—2 in. wide with five loops and tight pin; securely riveted to frame and bolted to door.

Locks—Masterkeyed locks with two keys attached to inside of door without exposed bolt heads. Combination locks or padlocks furnished if desired.

Number Plates—Solid brass with black enameled background and brass numerals, $\frac{7}{16}$-in. high.

Ventilation—Standard ventilation consists of six louvers at top and six at bottom of each door.

Equipment—Single tier, one hat shelf 9 in. from top; double tier, no shelf. Three single prong wall hooks and one double prong ceiling hook, brass number plate and padlock attachment; all hooks to have ball points and arranged for attaching with two bolts.



Single Tier Lockers

W-D-H	W-D-H
9x12x60	9x12x72
9x15x60	9x15x72
9x18x60	9x18x72
12x12x60	12x12x72
12x15x60	15x15x72
12x18x60	12x18x72
15x15x60	15x15x72
15x18x60	15x18x72
18x21x60	18x18x72
	18x21x72

Double Tier Lockers

W-D-H	W-D-H
9x12x30	9x12x36
9x15x30	9x15x36
12x12x30	15x15x36
12x12x36	12x15x42
12x15x36	15x15x42

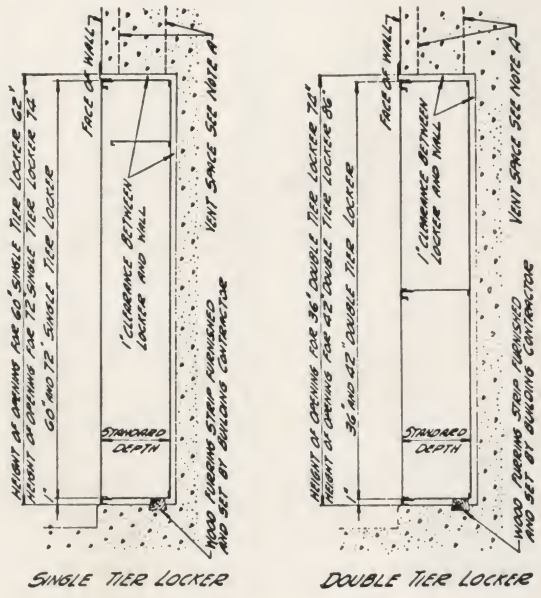
Compartment Lockers

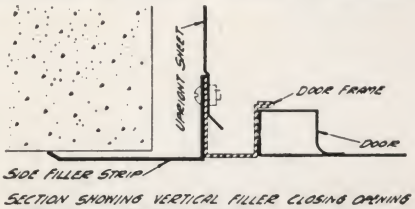
	W-D-H
5 or 6 high	12x12x12
5 or 6	12x15x12
5 high	15x15x14⅝
4 high	15x15x15

Lockers Recessed in Corridor Walls

These accompanying details are given to show the size opening required for the recessing of locker equipment. The height of the opening for recessed lockers should be at least 2 in. greater than the height of the locker without legs. Depth of recess to be 1 in. greater than depth of locker. Width of recesses should be 2 in. greater than the over-all width of the total number of lockers in the group.

Example, five lockers 12 in. wide, 12 in. deep by 60 in. high, without legs, recess in one group, the opening should be 5 ft. 2 in. wide, 13 in. deep, 62 in. high.





SECTION SHOWING VERTICAL FILLER CLOSING OPENING BETWEEN LOCKER AND WALL

Combination Locker No. 2860

Large compartment is provided with a coat rod and lock. Small compartments have flat key locks with two keys each, all of which will open the large compartment. No keys are provided for large compartment. The keys for one unit will not operate those of an adjoining unit.

	W. D. H.
5 Small Compartments	15x21x15
1 Small Compartment	18x21x15
1 Small Compartment	18x21x60



For Additional Information

For complete information on steel lockers phone our nearest branch listed above or write us direct at Canton, Ohio, for the Berloy Locker Catalog.

LYON METAL PRODUCTS, INCORPORATED

3932 Montgomery Street, AURORA, ILL.

SALES OFFICES IN ALL PRINCIPAL CITIES

FACTORIES: Aurora and Chicago Heights, Ill. ASSEMBLY PLANTS: Los Angeles, Cal.; Jersey City, N. J.

Products

STEEL SHELVING, LOCKERS, CABINETS, BOXES.
Also Store Fixtures, Folding Tables and Chairs.

Technical Engineering Co-operation

Lyon Engineers, experienced in all phases of planning installations, will be glad to co-operate with you when your plans are being made.

Just write or telephone our nearest office, or communicate with our general offices at Aurora for detailed information.

Manufacturer's Specifications—Single and Double Tier Lockers



Single Tier Locker
(Inches)

60-in. heights		72-in. heights	
W.	D.	W.	D.
12	12	12	12
12	15	12	15
12	18	12	18
15	15	15	15
15	18	15	18
18	18	18	18
18	21	18	21



Double Tier Locker
(Inches)

36-in. heights		42-in. heights	
W.	D.	W.	D.
12	12	12	12
12	15	12	15
15	15	15	15

Right:

Golf and Club Locker
(Inches)

W.	D.	H.
24	18	60
24	21	60
24	18	72
24	21	72

Standard Equipment—Coat rod and hooks, shelves, and golf ball tray.

Optional—Private compartment, mirror, comb tray, towel rod, card holder, umbrella holder—at extra cost.

Doors—Full cold rolled, patent leveled furniture steel. Two types available—the 20-gauge Rigid Door, and the 16-gauge Semi-Flexible Door.

Frames—Both vertical and horizontal members are 1x1x⅛-in. hard steel angles; joints rabbeted and electrically welded.

Body—24-gauge steel flanged at all sides to give double thickness of metal at each edge.

Tops—Flat, unless sloping tops are specified.

Hinges—Full loop hinges—three hinges on 60-in. and 72-in. high doors; two hinges on 36-in. and 42-in. high doors.

Ventilation—Standard louver perforation 5 in. wide by ¼ in. deep.

Locking Device—Three-point locking device on single tier lockers; two-point locking device on double tier lockers. Gravity locking bar remains up when door is opened. Closing door releases locking bar which drops quietly into place.

Locks—Master-keyed flat key locks with two keys each. Combination locks or padlocks can be furnished when specified.

Legs—Front legs are integral with frame. Fitted with adjustable feet. Rear legs are 1x1x⅛-in. hard angle.

Number Plates—Brass, with ½-in. etched black enamel numerals.

Equipment—Single tier locker—one hat shelf. Double tier locker—no shelf. 12-in. wide locker has 3 single prong and one double prong ball pointed rustproof coat hooks. Over 12-in. width, four single and one double prong hooks.

Silencing Device—Rubber cushions at all points where door strikes jamb and other points where metal contacts metal. Gravity locking device which eliminates noise due to locking mechanism "riding over" jamb.

Standard Finishes—Lyon green or brown baked enamel. Ivory gray can be furnished if desired. Coat hooks cadmium plated, bolts parkerized.

Recessing—Complete details in Locker Handbook No. 233.

Erection—All lockers shipped knocked down. We can erect or furnish erection superintendent.



Golf and Club Locker



Steel Folding Chair

Comfortable, durable, safe and attractive. Several types—fully upholstered, semi-upholstered, non-upholstered, with arms, and with steel cane saddle seat. A variety of finishes to harmonize with any interior. Catalogue No. 811



Box Locker
(Inches)

W.	D.	H.	Over-all heights
12	12	12	66 to 78
15	15	15	66
18	18	18	78

If legs are not required, deduct 6 in. from over-all heights. No shelves or hooks furnished.



Gymnasium Locker

One single tier locker, 9 in. wide, 12 in. deep, 60 in. high, used with 3 or more triple tier box lockers 9 in. wide, 12 in. deep, 20 in. high.

Equipment—Single tier locker: 1 hat shelf, 3 single prong and 1 double prong hooks. *Triple tier:* 2 single prong hooks and 1 double prong hook.



Two-person Locker
(Inches)

W.	D.	H.
15	15	72
15	18	72
15	21	72

Add 6 in. if legs are desired.

Hat compartment: 15 in. wide, 9 in. high.

Coat compartment: 7½ in. wide, 54 in. high.

The lock on the locking device on small door controlled from interior of large compartment.

Recessed Closet

Steel closets for wardrobe and storage purposes built into wall recesses. More sanitary, economical, and space-saving than old type closet.

Flexible interior arrangements provide adaptability for all closet needs.

Write Aurora for details on specific requirements.





Group Controlled Lockers

Lyon Group Controlled Lockers are designed primarily for elementary schools, although they fill a definite need wherever group control of lockers is desired.

The locking device is a simple mechanism that controls the locking of a single row of lockers. Reduces building cost, eliminates lost key troubles and gives each person a private compartment. Can also be used with individual locks

DURABILT

STEEL LOCKERS AND CABINETS



DURABILT STEEL LOCKER CO. AURORA, ILLINOIS

THE ANSWER TO YOUR CLOTHING AND EQUIPMENT STORAGE PROBLEM IS

DURABILT

Durabilt Steel Lockers and Durabilt Steel Cabinets, described and illustrated on the following pages, are the result of hundreds of tests and experiments based on the careful study of large installations in daily use, in schools, clubs, offices, industrials, etc., as well as the experience gained through years of specialization in the building of locker and cabinet equipment. Before you buy—before you specify—compare the Durabilt line with others—study the details of construction—check the specifications—see for yourself that here in this equipment, embodying so perfect a combination of neatness, sturdiness and many unique features, is the logical solution to your clothing and equipment problem.

DURABILT STEEL LOCKERS

meet every architectural and service requirement . . .

Durabilt Steel Lockers are renowned, in addition to their economy, for their features of distinctive design and attractive finishes; for their wide range of adaptability; for their sturdiness and modern refinements of construction.

Your requirements may be for school, club, factory, store, office, banks or lodge hall—they may be for thousands of lockers for new buildings or for a few hundred to provide increased facilities in present ones. No matter what the condition or the need, Durabilt is your assurance of meeting, in every respect, every architectural and service requirement.

DURABILT STEEL CABINETS

provide unlimited adjustability to interior arrangement . . .

Durabilt Steel Cabinets fill a long-felt need. Space savers—money savers, too—they are unlimited in application. Their range of uses is so wide, due to the numerous sizes available and the innumerable combinations of adjustable interior equipment, that they readily meet all storage requirements of business, social, educational, or institutional establishments.

DURABILT ADVISORY SERVICE

is always available for guidance in the solution of special problems .

While Durabilt Lockers and Cabinets have been standardized to meet the majority of needs, we are prepared not only to submit sketches on special designs but also to assist in an advisory capacity the preparation of any locker plans and specifications that may involve unusual considerations and conditions. A request to any of our sales offices or to us direct, will bring a Durabilt Sales Engineer to your assistance.

DURABILT

"No Better Built Than Durabilt"

DURABILT STEEL LOCKER CO.

508 Arnold Avenue
AURORA, ILLINOIS

•

SALES OFFICES
IN
ALL PRINCIPAL CITIES

•

THIS SINGLE TIER
DURABILT STEEL LOCKER

is but one of the innumerable types available in the Durabilt Locker Line

•



Above are shown two Durabilt full length or Single Tier Steel Lockers, free standing on legs, one closed and one open; the latter showing standard equipment: hat shelf, double prong ceiling hook and single prong side hooks.

THERE IS A DURABILT LOCKER TO MEET EVERY REQUIREMENT

for instance . . .



High School
Single Tier Lockers Recess in Corridor Walls



Country Club
Single Tier Lockers Set on Cement Bases, Double Row (Back to Back)



Type Foundry
Single Tier Lockers, Free Standing, Double Row (Back to Back)



National Bank
Single Tier Lockers, Free Standing, Set Against Wall

• for Schools and Gymnasiums

For clothing storage, the Durabilt Lockers best suited to schools and gymnasiums are the specially equipped full length or Single Tier lockers either recessed in the walls, on concrete bases, or free standing on legs. Where Single Tier lockers are not desired, we recommend the use of Double Tier Lockers. Multiple Tier Lockers, or "Box" Lockers are ideally adapted to storage of gym suits, books, sewing materials, etc. Combinations of any of these types, are of course, available. Durabilt Basket Racks and Trucks for gymnasiums, pools, etc., furnish well ventilated and secure storage facilities. All such equipment is treated in detail on the following pages.

• for Clubs, Lodges, Hotels, etc.

As in the case of schools, the specially fitted or equipped interiors of full length or Single Tier lockers either recessed in the walls, mounted on concrete bases, or free standing on legs are best suited to clubs, lodges, hotels, etc. Double Tier and Multiple Tier (Box) Lockers are also widely used in these instances.

• for Factories, Plants, Mills, etc.

For industrial establishements having large numbers of employees and where floor space is limited, there is available, in place of the full length lockers, a combination of Box Lockers and Single Tier lockers, commonly known as Compartment Lockers. The Multiple Tier (Box) Lockers are especially useful in storing small tools, aprons, shoes, gloves and such work-day articles.

• for Offices, Stores, Banks, etc.

For the employees of such commercial establishments, the adaptation of Durabilt Steel Lockers is, of course, dependent upon the number of employees, floor space, interior decoration, etc. Any of the above mentioned lockers either singly or in the innumerable combinations possible, are certain to meet ordinary or special requirements.

23 CONSTRUCTION



"NO BETTER BUILT THAN DURABILT"

1—**Rigid Door Frame**—1x1x⅛-in. hard steel angle uprights. 1½x¾ in. No. 14 gauge formed steel channel cross members securely joined to uprights at each end by two ⅛-in. counter-sunk head rivets, as riveting for this purpose is much stronger than welding. (Since *the strength of any locker is dependent on the rigidity of the door frame,* it will pay you to look into this point carefully when selecting locker equipment.)

2—**Scientifically Reinforced Door**—The illustrations of "Door Construction" and "Top Construction" show full-length tubular reinforcements on vertical edges of door, also hemmed flanges as used on both top and bottom of door. (No danger of bottom flange of door being bent out of shape by stepping on it.) Corners of door are securely tied together by means of arc welding.

*3—**Quiet Automatic Latching Device**—(No metal to metal contact when door is being closed. This Patented, Tamperproof Latching Device is *Concealed* inside the vertical tubular reinforcement of door.

4—**Patented Stamped Steel** (not cast) **Straight-Lift Handle**—With curled grip which provides ample space for comfortable hand-hold.

*5—**Padlocking Attachment with Rubber Silencers**—Arranged for use of any standard padlock; and in addition, is designed with two rubber silencers so that noise is practically eliminated when handle is raised or lowered.

*6—**Reinforced, full looped** (metal formed completely around pin), **five-knuckle, Strap Hinge**—Attached to door with two Binder Head bolts, permits door to open approximately 180 degrees. Three each on single tier and double tier standard lockers. The hinges are riveted to the door frame directly opposite the lock fingers as this gives added security. Hinge pins are embedded in angle so they cannot be driven out, neither would the removing of hinge bolts make it possible to enter the locked locker without a key.

*7—**"Safety" Type Ventilating Louvres**—(So designed as to prevent anyone injuring themselves on them.) Louvres are 4½ in. wide, with ⅜ in. opening and are 1⅛ in. apart, center to center.

*8—**Reinforcing Plate Under Hinge**—(This is a No. 14 gauge plate welded to inside of door which serves as an added protection against exceptionally rough treatment.)

*9—**Improved Lock Fingers with Rubber Silencers**—which reduce noise from slamming of doors.

*10—**Automatic Locking Bar Release**—(Closing of door automatically releases

*THESE ARE NEW AND

FEATURES OF MERIT

locking bar permitting it to quietly drop into locked position.)

11—**Lock is attached to inside of door, without exposed bolt heads**—which eliminates all opportunity of chiseling off bolts to gain access with malicious intent.

12—**All Coat Hooks attached with two screws**—making it impossible to twist off by hand or remove without use of tools. Udylite Rust-proof finish.

*13—**Perfect Fitting Top and End Finishing Strips**—attached by means of concealed screws. (By far the neatest and most attractive trim ever furnished for recessed locker installations.)

14—**Attractive Number Plates**—Each locker furnished with satin nickel finish brass number plate with black filled depressed numbers $\frac{7}{16}$ in. high. Plates securely attached with split rivets (not screws) making stealing of them very difficult.

15—**Flush Bottom**—(Easily cleaned and built strong enough so that standing on Bottom will not injure it.)

16—**Adjustable Rear Legs**—(Very desirable for leveling up rear of lockers when floors are uneven.)

17—**Adjustable Front Feet**—(Permit anchoring and taking up of irregularities due to floor unevenness.)

18—**All Screws and Nuts rust-proofed by the Udylite Process**—(This precaution eliminates possibility of getting rust spots on clothing.) All outside screws are of the slotless binder head type.

19—**Binder Head Hinge Bolts with Knurl under Head. Two to each Hinge**—(Hold door securely and do not work loose in every-day use.)

20—**Curled Front Edge on Shelf**—(No danger of injury by children hanging on them.)

21—**Right Hand Swinging Doors**—Doors are hinged to swing to the Right (not left) as this is the logical way for right-handed people to open them.

22—**Attractive "Satin Texture" Enamel Finish**—Baked on at proper temperature to insure finest appearance and durability. (Will stand rigid hammer test without flaking.) All parts thoroughly cleaned before enamel is applied.

23—**Special Equipment**—In addition to standard equipment such special equipment as vertical partitions, coat rods, closed bases, drawers, umbrella racks, drip pans, mirrors, comb and brush trays, towel rods, golf ball trays, golf bag chains, chapeau hooks, sword clips, gun clips, etc., can be furnished to order.



Top and End Finishing Strips—Attached by means of Concealed Screws. Neat in Appearance and of Rugged Construction.

Locking Finger with Rubber Silencer

Full - looped, Five-knuckle "Strap" Hinge—With non-removeable pin; also Hinge Reinforcing Plate which is welded to inside of door.

Automatic Locking Bar Release — (Reduces Noise.) Supports Locking Bar, preventing it from dropping when door is opened. Automatically releases Locking Bar when door is completely closed, allowing bar to quietly drop into locked position without striking locking fingers.

Door Construction—Showing Vertical Tubular Reinforcements, Horizontal Hemmed Flanges, Patented Concealed Latching Device, Hinge Reinforcing Plates, etc.

Details of Latching Device—Showing secure manner in which Locking Finger engages Locking Bar, making it impossible to pry open locked door without completely demolishing it; Patented Stamped Steel Handle with "Comfortable" Grip; Lock attached without exposed bolt heads; Lock Bolt entering directly into Locking Bar; Padlocking Attachment with Rubber Silencers; etc.

"NO BETTER BUILT THAN DURABILT"

EXCLUSIVE FEATURES

DURABILT STEEL CABINETS

Provide Unlimited Flexibility In Interior Arrangement

The Durabilt line of Steel Cabinets permits an almost endless variety and flexibility of interior equipment combinations for varied storage applications. The range of uses is so wide, due to the numerous sizes available and combinations of adjustable interior equipment, that they readily meet all storage requirements.

For secure, dust-proof, fire-retarding, vermin-proof and orderly storage of coats, hats, stationery, office supplies, tools, instruments, scientific apparatus, household supplies and literally thousands of other applications, these sturdy and attractive Durabilt Steel Cabinets are second to none. On this page are shown a few of their many practical applications. It would be an extremely easy matter to secure the combination of interior equipment best suited to the particular requirements of your storage problem.

Cabinet Shells

The foundation upon which the wide range of Durabilt combinations is built are the Durabilt cabinet "shells." These "shells," available in various sizes are really cabinets without any interior equipment. Available with or without doors, they are so arranged that a large variety of interior equipment parts can be easily inserted inside to form practically any storage facilities desired. For this purpose, slots are provided in the left and right front and rear corners, and it is but a matter of tightening or loosening a few wing nuts, or bolts in order to insert, adjust, change or remove any of the various interior equipment parts available. A vertical adjustment of 1 in. is provided for shelves, drawers, racks, etc.



Wardrobe Cabinet



Stationery Storage Cabinet



Cabinet Illustrating a Few Interior Arrangements



The Durabilt Cabinet "Shell"



Teachers' Cabinet (Full Height Partition)



Janitor's Cabinet (Short Partition)



Book Storage "Doorless" Cabinet



Wardrobe Cabinet (Single Door)

Sizes

Double-Door Cabinets—These cabinets have a standard width of 36 ins. overall, and can be obtained in depths from 12 to 24 ins. in multiples of 3 ins., and in heights of 30½, 42, 66 and 78 ins. Also obtainable without doors.

Single Door Cabinets—These cabinets have the door hinged on the right. They have a standard width of 19½ ins., with the same depths and heights as the double-door cabinets.

One and Two-Door Desk and Counter High Cabinets—Are available with one door or two. The one-door cabinet has a standard width of 19½ ins., with depths of 18 and 21 ins. and heights of 30½ and 42 ins. The two-door cabinet has a standard width of 36 ins. with the same depths and heights as the one-door cabinet.

Interior Equipment

All you need to start storing the Durabilt way is the cabinet shell, then add one or more of the interior equipment parts as needed. No holes to drill, nothing to saw or cut—nothing to warp, crack or break. The interior arrangement can always be readily varied to meet changing conditions.

All shelves, drawers and racks are adjustable on 1 in. centers. Shelf trays are removable. Partitions and bin fronts are available in 1, 3 and 6-in. heights. Drawers from 2 to 12 ins. deep can be divided from left to right and front to back into small storage places for thousands of items. Swinging panels offer handy storage for many other items that can be hung on pegs.

The following is a list of a few of the standard steel equipment parts available to provide the flexibility feature of Durabilt Steel Cabinets.

Storage Shelves	Sloping Shelves
Bin Fronts	Drawer Partitions
Shelf Partitions	Drawer Dividers
Wing Partition (Shelf)	Blue Print Drawers
Shelf Trays	T-Square Racks
Shelf Compartment Boxes	Saw Racks
Tool Drawers	Plier Racks
6-in. High Drawers	Screw Driver Racks

Tool Racks and Adjustable Brackets



Counter High Cabinet



Desk High Cabinet

CONSTRUCTION DETAILS

We submit sketches on special designs (providing the quantity needed would justify it), and assist in the preparation of your plans and specifications.

Durabilt cabinets are made of full cold rolled patent leveled No. 20 gauge enameling steel rolled to our specifications.

Doors—The doors have a tubular reinforcement on inside adjacent to each vertical hemmed edge, a right angle flange adjacent to each horizontal hemmed edge, also full length channel shaped (pan) reinforcement in center which prevents warping or sagging and makes them exceptionally rigid.

Frame—A strong, rigid door frame is made by interlocking the top, bottom and sides. Frame is offset where doors overlap, assuring a close fit, giving dust-proof and fire-retarding features.

Body—Front edge of sides, forming vertical part of door frame, is made of a tubular reinforcement 1½ in. wide by 1 in. deep. This reinforcement is slotted on inside to form front support for shelves. Sides have right angle flanges at rear for bolting to top. No bolt heads appear on exterior surface.

Back—The back has a channel formed at each vertical edge which is slotted to support shelves. Slots are completely protected and covered at rear by 1¼-in. right angle flange of sides extending full height of back.

Top—The top is a one-piece formation with 3-in. channel offset at front to form upper part of door frame. Remaining three edges have right angle flange for bolting to back and sides.

Bottom—Formed with 4-in. channel at front continuing to floor, making closed base. Bottom serves as lower shelf and is offset at front where doors overlap. Special die-formed clips welded on inner surface of sides provide means for attaching bottom. Each corner at bottom provided with "Dome of Silence" so cabinet can be moved without marring floor.

Locking Device—Consists of a special, triple action, straight throw mechanism operated by attractively designed, chromium plated lever type handle. Vertical locking bolts, concealed in tubular reinforcement, engage holes at top and bottom of door frame, while heavy, horizontal bolt locks doors at center.

Locks—Flat key locks are standard. Grooved key, or pin tumbler locks with two keys each can be furnished at slight extra cost. (Masterkeyed, if required.)

Hinges—Three on each door. 2½ in. wide by 4 in. long, five knuckle special butt type with edges neatly beveled. Each hinge attached to door by means of reinforcement plate welded to inside. This eliminates conspicuous bolt heads on exterior. The design and arrangement of hinges permit the doors to open all the way back against sides so they do not take up aisle space.

Finish—"School Furniture" Brown and "Satin Texture" Olive Green baked enamel are standard. These shades harmonize with any interior trim and are especially adapted to school use.

Complete Range of Sizes—See paragraph on "Sizes" above. Door openings are 3 inches less in width and 7 inches less in height than normal dimensions.

Installation—Durabilt Steel Cabinets can be either "built-in" the walls or "portable," which are stood along the walls. Neat trim or moulding furnished to fill opening around top and ends of recessed cabinets.

Shipment—A large stock of standard sizes of cabinets and interior equipment is available for prompt shipment. Write or phone for prices and further information. Suggestions and quotations place you under no obligation.

TYPES OF LOCKER DOOR PERFORATION

STANDARD LOUVRE			STANDARD ROUND HOLE		
Size of locker	No. of Louvres		Size of locker	No. of round holes	
	Top of door	Bottom of door		Top of door	Bottom of door
72″ S.T.	6	6	72″ S.T.	49	49
60″ S.T.	6	6	60″ S.T.	49	49
42″ D.T.	3	3	42″ D.T.	49	49
36″ D.T.	3	3	36″ D.T.	49	49
FULL LOUVRE			FULL ROUND HOLE		
72″ S.T.	29	23	72″ S.T.	196	147
60″ S.T.	23	18	60″ S.T.	196	147
42″ D.T.	16	10	42″ D.T.	112	84
36″ D.T.	13	8	36″ D.T.	98	49

Louvres are 4½″ wide x $\frac{3}{16}$″ deep—1⅛″ apart, center to center. Round holes are ½″ in diameter on 1″ centers.



Standard Louvre



Full Louvre



Standard Round Hole



Full Round Hole

NOMENCLATURE OF LOCKER TERMS

Steel lockers are of many types. These include single tier, double tier, multiple tier lockers, also combinations of the three. In order to clarify the distinction between the various types of lockers, the following explanation is given of the most general and accepted terms used in specifying lockers.

A Locker:

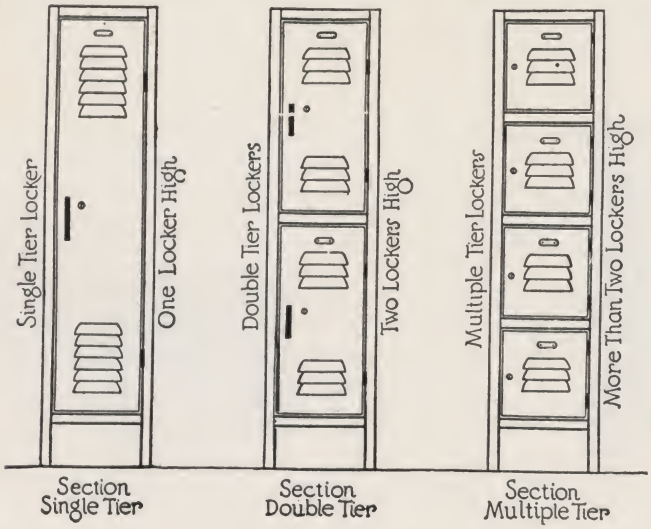
The term "locker" is used to describe *each opening having its own door,* regardless of arrangement.

A Section:

The term "section" is used to describe an arrangement *one locker wide.* A section may be made: Single Tier, Double Tier, Multiple Tier (Box Lockers) as shown in Figures 1, 2 and 3 respectively.

A Group:

The term "group" is used to describe *an assembly of sections.* A group may be composed of single tier, double tier, or multiple tier (box) lockers, and may be arranged single row (that is, with one face) or double row back to back (with two faces).



An Installation:

This term is used to describe *the arrangement of "groups" as installed.* In planning installations particular attention should be given to width of aisles. Aisle space between opposite ends of locker rows should not be less than 24 ins. Aisle space between locker rows should be twice the locker width, plus 12 ins. as a minimum. For example, if lockers are 12 ins. wide, aisle space between locker rows would be 36 ins. Space between face of lockers and mid-aisle benches should be the width of the locker, plus 6 ins. For example, if lockers are 12 ins. wide, this space should be 18 ins. These dimensions are given as a minimum. If space permits, the aisles in the locker rooms between the lockers should be wider.

EQUIPMENT

Shelves:

All Single Tier lockers, unless special, are equipped with one shelf as standard. (Double Tier and Multiple Tier lockers are not shelf-equipped as standard). If additional shelves are required, they may be secured by specifying the number required and position desired.

Legs:

All lockers are equipped with legs as standard. Legs may be omitted if desired, but must be so specified when ordering.

Closed Bases:

The term "closed base" describes the part used to close the space between the bottom of the locker and the floor. When closed bases are required, be sure to specify if fronts only are to be closed, or if closed base is also required on the ends. If closed bases are required, specify if for single or double row lockers.

SIMPLIFIED LIST OF LOCKER SIZES

(In Accordance with Simplified Practice Recommendation R35-28 of Department of Commerce. All Dimensions are Inches)

SINGLE TIER

Width*	Depth	Height	Maximum over-all height, including legs
12	12	60	66
12	15	60	66
12	18	60	66
15	15	60	66
15	18	60	66
18	21	60	66
12	12	72	78
12	15	72	78
12	18	72	78
15	15	72	78
15	18	72	78
18	18	72	78
18	21	72	78

DOUBLE TIER

Width*	Depth	Height	Maximum over-all height, including legs
12	12	30	66
12	12	36	78
12	15	36	78
15	15	36	78
12	15	42	90
15	15	42	90

MULTIPLE TIER (BOX)

Lockers per stack	Width*	Depth	Height	Max. over-all height, including legs
5 or 6 high	12	12	12	66 or 78
5 or 6 high	12	15	12	66 or 78
4	15	15	15	66
5	15	15	14 $\frac{2}{16}$	78

*This dimension does not include the projecting bolt heads. When filling fixed spaces with rows of lockers, allowance should be made for such projections.

ACCEPTABLE SPECIALS

For those who find that the "simplified list of locker sizes" will not satisfactorily fill their requirements, the following acceptable specials can be manufactured with reasonable economy.

SINGLE-DOUBLE TIER

Widths:	9—12—15—18—24
Depths:	12—15—18—21—24
Heights, single tier:	60—72
Heights, double tier:	30—36—42

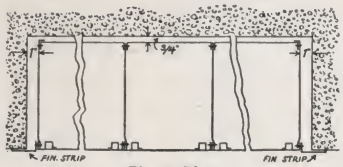
MULTIPLE TIER

Widths:	12—15—18	
Depths:	12—15—18—21	
Heights:	12 built 5 or 6	lockers high
	15	4 lockers high
	14 $\frac{2}{16}$	5 lockers high
	18	4 lockers high
	20	3 lockers high
	21	4 lockers high
	24	3 lockers high

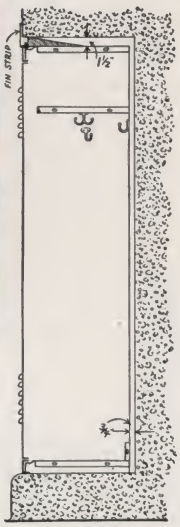
METHODS OF LOCKER INSTALLATION

RECESSED, WITH TOP AND END FINISHING STRIPS





Floor Plan



End View

One of the most economical and attractive arrangements of lockers is the recessed corridor method. It utilizes space that might otherwise be wasted. It beautifies corridors because the lockers may be blended and harmonized with the decorative scheme. When lockers are recessed, it is necessary to close up the top and ends of recesses where the lockers fit in. For this purpose we furnish steel or wood finishing strips enameled in the same color as the locker. Illustrations on page 3 show how concealed joint clips are used to engage top and end strips or adjoining top strips. This eliminates unsightly screw heads on exterior surface. When joint clips are engaged, there is a spring contact holding the finishing strips in alignment with a smooth, flush butt joint, making a finishing strip free from exposed screw heads. Details of typical installations are given on page 10.

Note: Recessed type lockers are made without legs. When building recesses, the width should be 2 ins. greater than total nominal width of lockers. Depth of recess should be at least ¾ in. greater than depth of lockers. Height should be approximately 1½ in. greater than height of lockers.

FREE STANDING



While the trend today leans more to the recessed type of locker installation, there are places where recessing cannot be done to best advantage. This is particularly true of school buildings already erected, and in factories, clubs, gymnasiums, Y. M. C. A.'s, lodge halls and other places not having sufficient corridor space to house built-in lockers. For such buildings, we recommend installations of single row lockers (usually placed with back to wall) or double row lockers (back to back) with the legs which are standard on Durabilt Lockers. These legs are integral with the frame and have adjustable feet to take care of any floor unevenness or slope. See details of typical installations on page 11.

WITHOUT LEGS, ON CEMENT BASE



It is oftentimes desirable to have the lockers furnished without legs and elevated or set on cement bases for sanitary purposes as well as for neat appearance. Either single row or double row lockers can be placed on cement or terrazzo bases (see typical installation details on page 11). Gymnasium Basket Racks can likewise be furnished for setting up in the same manner. In such installations, lockers should be requested without legs and bases should be detailed in building plans. The regularly accepted height of cement bases for all purposes is approximately 6 ins. The width and length of the base depends of course, on the grouping and number of lockers to be installed.

SLOPING TOP AND/OR CLOSED BASE



Where extreme fire hazards exist, or where placing of anything on top of lockers would be objectionable, sloping tops are available. For free standing lockers, where it is desirable to eliminate collection of dirt, papers, etc., under lockers, base closing plates are furnished which close the space at the front and sides between bottom of locker and floor. Sloping Tops may be had for all lockers and can be used alone or in combination with the Closed Base. Details are given on page 10.

COMPLETE ERECTION INSTRUCTIONS FURNISHED

We can erect lockers in the field, or furnish erection superintendent to supervise other workmen in erecting the lockers. Comprehensive instructions, however, are supplied with each order of lockers which enable customers to effect economies by handling their own installations.

TYPES OF DURABILT STEEL LOCKERS

SINGLE TIER LOCKERS



Single Tier

Single Tier lockers provide service in a most convenient form. They are available in the practical heights of 60 or 72 ins. and in the various widths and depths given in the table on page 5.

A Single Tier locker of small dimensions, say 12 ins. wide, 12 ins. deep and 60 ins. high (not including the legs), capably takes care of any ordinary requirements for individual use. The size of the locker, however, should be increased in such cases as school "team" rooms, gymnasiums, etc., in order to make the storing of athletic uniforms, equipment, etc., more convenient. The Single Tier locker is regularly provided with a hat shelf. Because this shelf decreases the space for hanging clothes, authorities generally prefer the 72-in. locker, for the average use, better than the 60-in locker. Space limitations determine, of course, the size and number of the Single Tier lockers to be installed, but competent planning and careful use of available floor space will reveal the surprising adaptability of this type of locker to orderly and efficient locker rooms.

Standard equipment for Single Tier lockers includes the hat shelf, one double prong ceiling hook and three or more single prong side hooks, depending on size of locker. Equipment can be varied to meet individual requirements for such lockers as the Armory, Police, Lodge, etc., shown on page 9. Specifications are given on page 12.

DOUBLE TIER LOCKERS



Double Tier

The Double Tier locker is economical as to space and cost. Necessarily, it is more cramped and provides less storage capacity. This type of locker, however, is ideally suited to conditions where large storage space is not required such as for smaller and younger pupils in grade schools. Double Tier lockers are often used in combination with Single Tier or Multiple Tier lockers to form units that meet the storage problems of almost any unusual condition. In schools, gymnasiums, clubs, etc., Double Tier lockers are often utilized for the storage of gym shoes. In such use, standard equipment is replaced by partitioned shoe compartments, 6x6 ins.; the capacity is from 10 to 18 compartments per locker, according to locker size. While 6x6 ins. is the accepted size for shoe compartments, other sizes that work out on multiples can be furnished. Single Tier lockers may also be thus utilized.

Standard equipment is the same as for Single Tier lockers, with the hat shelf omitted. Specifications are given on page 12; sizes on page 5.



Multiple Tier (Box)

MULTIPLE TIER (BOX) LOCKERS

Multiple Tier (Box), or small compartment lockers as they are sometimes called, have a wide field of usefulness. They can be used to advantage wherever small storage space is required. In schools, gymnasiums, clubs, etc., they are ideal for storing gym suits and shoes, books, lunches, etc. In factories, offices, stores, etc., they are widely used for storing small tools, work shoes, overalls, etc. In combination with Single Tier or Double Tier lockers, they are especially popular.

Like all Durabilt Lockers, they can be furnished for recessing in walls, in single row for arrangement along the walls or in double row or back to back arrangement. They come in tiers three or more high and as many lockers wide as space or requirements permit. No shelves or hooks are furnished with Multiple Tier (Box) lockers. Specifications will be found on pages 12 and 13; sizes on page 5.

GYMNASIUM LOCKERS

While in many schools, clubs, lodges, etc., having gymnasiums the average requirements can be taken care of by Double and Multiple Tier lockers arranged according to conditions, the modern trend is toward a combination arrangement shown in the illustration. This type is usually termed "Gymnasium Locker Unit." A complete unit consists of one standard Single Tier locker in combination with double tier lockers, two high, in sections two, three or four wide. Multiple Tier (Box) lockers can be added, of course, to suit individual requirements.



Gymnasium Locker Unit

Standard equipment consists of one hat shelf in large compartments. All compartments have one double prong ceiling hook and three or more single prong side hooks depending on size of locker. Various combinations consisting of Single Tier lockers, Double Tier lockers, two or three high and Multiple Tier lockers can be made up. Specifications are given on page 13.

GYMNASIUM LOCKER SIZES
(Dimensions are in inches)

Large Compartments W. D. H.*	Small Compartments
12x12x60	6 x12x30 Double Tier Arrangement
12x15x72	6 x15x36 Double Tier Arrangement
15x15x60	7½x12x30 Double Tier Arrangement
15x15x72	7½x15x36 Double Tier Arrangement
	9 x12x20 Triple Tier Arrangement
	9 x15x24 Triple Tier Arrangement

*Overall height, including legs, is 6 ins. greater.

LOCKER ROOM BENCH TOPS AND PEDESTALS

Quite often, customers want to purchase their locker room benches locally, while others prefer that we furnish them. In order to extend complete service to our customers we are prepared to furnish Bench Tops and Pedestals as follows:



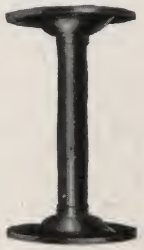
Locker Room Bench (Bench Top and Pedestals)

Bench Tops

Yellow pine seems to be the most popular wood for locker benches and, unless otherwise specified, we will always furnish it. Our bench tops are carefully sanded, with rounded corners and edges, and finished with one coat of shellac and one coat of varnish. Ordinarily, tops are furnished in 6, 8, 10 or 12 ft. lengths, either 8, 10 or 12 ins. wide and 1½ or 2 ins. thick.

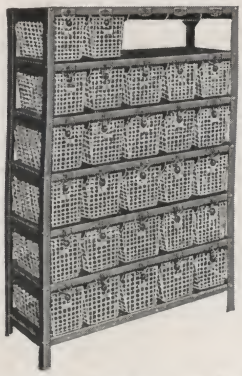
Bench Pedestals

These strong and rigid pedestals are of our special design. They are made with heavy cast iron base and top approximately 7 ins. in diameter, and a strong tubular column 1⅝ ins. in diameter. There are four holes in the base and four in the top for attaching to floor and bench. Finish is baked-on black japan. Pedestal weighs approximately 9 lbs. Standard overall height is 16½ ins. but other sizes can be furnished. Pedestals should be placed 1 ft. from each end of bench top and not more than 5 ft. apart. When ordering, always give size of benches and quantity of pedestals required.



Pedestal

BASKET RACKS AND TRUCKS



Single Row, Skeleton Type Rack



Double Row, Solid Ends Truck

The use of steel racks and wire baskets is often preferred to Multiple Tier (Box) lockers. This system is less expensive and gives the advantages of complete ventilation and makes the contents visible for inspection at any time. The security and orderly appearance of the box lockers is, of course, sacrificed to some extent. The illustration at the left shows the single row, skeleton type, Basket Rack with baskets in place. This rack has a capacity of 30 baskets and consists of steel shelves with angle uprights, basket separators and padlock hasps which permit locking of the baskets in place. The illustration at the right shows the double row Basket Truck, built with solid ends and casters instead of legs, for portability. Basket Racks can be furnished with legs or without legs, the latter arrangement for the purpose of setting the racks up permanently on cement or terrazzo bases. They can be set up in single row arrangement or built for double row arrangement. Racks may vary to accommodate 30 to 48 baskets each; Trucks, 60 to 84 baskets each. Specifications on page 13.

BASKET RACKS

Capacity			W. D. H.
30 baskets	8½x13x8½"	(5 wide x 6 high)	47x13½x61¼"
35 baskets	8½x13x8½"	(5 wide x 7 high)	47x13½x71¼"
40 baskets	8½x13x8½"	(5 wide x 8 high)	47x13½x81¼"
36 baskets	8½x13x8½"	(6 wide x 6 high)	56x13½x61¼"
42 baskets	8½x13x8½"	(6 wide x 7 high)	56x13½x71¼"
48 baskets	8½x13x8½"	(6 wide x 8 high)	56x13½x81¼"
30 baskets	11½x13x8½"	(5 wide x 6 high)	62x13½x61¼"
35 baskets	11½x13x8½"	(5 wide x 7 high)	62x13½x71¼"
40 baskets	11½x13x8½"	(5 wide x 8 high)	62x13½x81¼"

Heights listed above do not include 4¾-in. legs.

BASKET TRUCKS

Capacity	W. D. H. Overall
60 baskets 8½x13x8½" 5 wide x 6 high Double Row.	47x27x65"
84 baskets 8½x13x8½" 6 wide x 7 high Double Row.	56x27x75"
60 baskets 11½x13x8½" 5 wide x 6 high Double Row.	62x27x65"
84 baskets 11½x13x8½" 6 wide x 7 high Double Row.	74x27x75"

WIRE BASKETS



Because of the rough treatment wire baskets receive, we designed the exceptionally strong basket illustrated, for use in Durabilt Basket Racks and Trucks. It is made of 1 in. square mesh No. 15 gauge wire, with ⅜-in. top frame and ⅛-in. diagonal braces. To prevent rust, baskets are finished with a heavy coating of tin after manufacture. Special padlock loop in top frame holds basket in line with front of shelf when padlock is attached. A brass, satin nickel finished number plate is riveted on one end approximately 2 ins. from top edge.

Standard sizes are: 8½ ins. wide x 13 ins. deep x 8½ ins. high; 11½ ins. wide x 13 ins. deep x 8½ ins. high. Can be furnished in ¾ and 1 in. mesh. See specifications on page 13.

COMBINATION LOCKERS

Combination coat and hat lockers (sometimes referred to as compartment lockers) provide unusually convenient service and are conserving of floor space. They are particularly desirable for railroad offices, department stores, telephone exchanges, or wherever women are employed. Each compartment and "box" locker is equipped with a lock that is master-keyed. The key for each small hat compartment operates the lock on its corresponding coat compartment giving access to both by the use of one key.

Durabilt Combination lockers, either 6, 7 or 8 person, can be placed against the wall, or back to back in various group arrangements. For sizes and standard equipment, see specifications on page 13.



7-Person Combination Locker

DOUBLE DOOR GOLF LOCKERS



In general, the design, construction, material and finish of Double Door Golf Lockers is the same as our standard Single Tier lockers except that double doors are hinged to swing right and left. They have a vertical partition, one standard shelf, one combination shelf and golf ball tray, coat rod, golf bag chain, and one small box compartment fitted with frame and hinged door which can be locked, giving added protection to valuable personal effects. Golf lockers can be furnished in various sizes and styles with or without special equipment such as drawer at bottom, mirrors, comb-trays, towel rods, umbrella racks, drip pans, golf ball trays, golf bag chains, single or double doors, etc.

SIZES
(Dimensions are in inches)

W. D. H.*	W. D. H.*	W. D. H.*
24x18x60	24x24x60	24x21x72
24x21x60	24x18x72	24x24x72

*Overall height, including legs, 6 ins. greater.

LOCKERS WITH TRAYS

Adapted to innumerable uses wherever small objects are to be stored or classified. Individual trays easily removed. Equipment consists of nineteen 3-in. trays in the 60-in. high locker and twenty-three 3-in. trays in the 72-in. high locker. Lockers can be furnished with doors, also without legs. Trays are No. 24 gauge steel. Tray equipment consists of two guides, one cadmium plated drawer pull number plate, and label holder. Special shelf with ⅜-in. hemmed flange at front is furnished above each tray.



OVERALL SIZES
(Dimensions are in inches)

W. D. H.*
12x15x60
12x15x72

*Add 6 ins. for length of legs.

KEY CABINETS

Small size has 100 hooks on back; inserting one swinging leaf provides 200 and panel on door provides 100 additional hooks. Two leaves can be added. Large size Cabinet has twice as many hooks. Adjustable or fixed hooks hold *five locker keys.* Number is stamped in white above each hook to correspond with locker numbers. Can be locked with any of our standard locks or padlocks. "School Furniture" brown or "Satin Texture" olive green baked enamel finishes. Other colors at extra cost.



SIZES
(Dimensions are in inches)

W. D. H.
15x6x30
24x6x30

OTHER TYPES OF DURABILT STEEL LOCKERS

This page shows but a few of the many other types and combinations of lockers available in the Durabilt line. They are of the same sturdy construction and materials as all Durabilt Lockers previously described. They are offered in evidence of the fact that in Durabilt you are assured of finding the solution to your locker problems.



TWO PERSON LOCKERS

W D H*
15x12x60″
15x15x60″
15x18x60″
15x12x72″
15x15x72″
15x18x72″
15x21x72″

Equipment consists of two hat shelves, vertical partition dividing lower part into two coat compartments each having one double prong ceiling and two or more single prong side hooks, depending on size of locker. Can be furnished without partition when desired.



TWO-IN-ONE LOCKERS

W D H*
15x15x72″ without coat rod
15x18x72 with coat rod
15x21x72″ with coat rod

Coat compartments are 7½″ wide x 54″ high. Hat compartments are 15″ wide x 9″ high, making total height of section 72″ *exclusive of legs.*

Equipment—One double prong ceiling hook and two or more single prong side hooks, depending on size of locker. Lockers 18″ deep and over have a coat rod in addition to hook equipment.



DUPLEX LOCKERS

W D H*
15x15x72″
15x18x72″
15x21x72″

Two lockers in special 15″ wide frame. Each locker 7½″ wide. Provides 2835 cu. in. capacity in 18″ deep locker.

Equipment—1 hat shelf spaced 21″ down from top, one single prong coat hook above shelf; one double prong ceiling hook bolted to shelf and 2 or more single prong hooks below shelf. Coat rods can also be furnished. Requires only 2 locks. Very economical and conserves floor space.



DOUBLE TIER SHOE LOCKERS

W D H*	No. of 6″x6″ openings
12x12x30″	10
12x15x30″	10
12x12x36″	12
12x15x36″	12
18x12x36″	18
18x15x36″	18

Double Door Shoe Lockers

These can be furnished in 30″ and 36″ widths, in either 60″ or 72″ heights having compartments nominally 6″ wide x 6″ high.



SINGLE TIER SHOE LOCKERS

W D H*	No. of 6″x6″ openings
12x12x60″	20
12x15x60″	20
18x12x60″	30
18x15x60″	30
24x12x60″	40
24x15x60″	40
12x12x72″	24
12x15x72″	24
18x12x72″	36
18x15x72″	36
24x12x72″	48
24x15x72″	48

While 6″x6″ is the accepted size for shoe compartments, other sizes in proper multiples can be furnished.



SINGLE DOOR GOLF LOCKERS

W D H* W D H*
15x15x72″ 18x18x72″
15x18x72″ 18x21x72″

Equipment is as follows (but may be varied to meet individual requirements)—7″x9″ tilting mirror, comb and brush tray, towel rod, umbrella rack, drip pan, combination hat shelf and golf ball tray, coat rod, one double prong ceiling hook, four or more single prong side hooks, (depending on size of locker) golf bag chain, shelf and drawer at bottom.



SINGLE DOOR STORAGE LOCKERS

(With Stationary Shelves)

W D H* W D H*
15x15x60″ 15x15x72″
15x18x60″ 15x18x72″
18x18x60″ 18x18x72″
18x21x60″ 18x21x72″
18x24x60″ 18x24x72″

Equipment consists of four stationary shelves spaced equidistant unless otherwise specified at time of ordering. More shelves can be furnished, if required. Can be had with adjustable shelves.



DOUBLE DOOR WARDROBE LOCKERS

W D H* W D H* W D H* W D H*
30x15x60″ 36x15x60″ 30x15x72″ 36x15x72″
30x18x60″ 36x18x60″ 30x18x72″ 36x18x72″
30x21x60″ 36x21x60″ 30x21x72″ 36x21x72″
30x24x60″ 36x24x60″ 30x24x72″ 36x24x72″

Equipment consists of adjustable wardrobe shelf assembly with a coat rod and six double prong ceiling hooks.

This locker can easily and quickly be converted into a spacious storage locker by removing the wardrobe shelf assembly and inserting the desired number of storage shelves.



OFFICE LOCKERS

W D H* W D H*
12x18x60″ 15x15x72″
15x18x60″ 15x18x72″
18x21x60″ 18x18x72″
12x18x72″ 18x21x72″

Equipment is as follows (but may be varied to meet individual requirements), hat shelf, coat rod, one double prong ceiling hook, three or more single prong side hooks (depending on size of locker), 7″x9″ tilting mirror, comb and brush tray, towel rod, umbrella rack and drip pan.



ARMORY LOCKERS

W D H* W D H*
15x18x72″ 18x21x72″
18x18x72″ 18x24x72″

Small compartment is 15″ high and large compartment is 57″ high or a total height of 72″ exclusive of legs.

Large compartment has coat rod, one double prong ceiling hook, four or more single prong side hooks (depending on size of locker), and clips for holding rifle.



LODGE LOCKERS

W D H* W D H*
15x18x72″ 18x21x72″
18x18x72″

Equipped with shelf for cap and baldric, coat rod, one double prong ceiling hook, four or more single prong side hooks (depending on size of locker), chapeau rack and clips for sword and scabbard.



POLICE LOCKERS

W D H* W D H*
18x18x72″ 18x24x72″
18x21x72″ 24x24x72″

Equipment consists of hat shelf, coat rod, one double prong ceiling hook, four or more single prong side hooks (depending on size of locker), shoe rack and card holder on door to take card 1⅛″x1¾″.



UNIT CONTROLLED GROUP LOCKERS

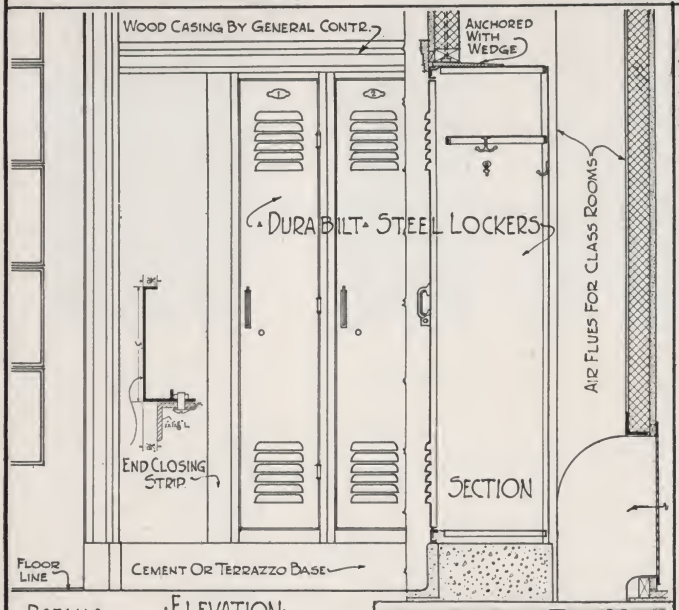
Entire group of lockers can be locked or unlocked by operating control lever mechanism in master locker (first locker at left of group.) This master locker can be locked with any type standard locker lock or padlock, either key or combination.

Group control mechanism can be made inoperative, so that lockers may be locked individually, if desired.

Ideal for corridor, classroom, or locker room installation. Gives teacher or monitor absolute control of every locker. Write for complete information, detailed drawings, specifications, etc.

*Overall height, including legs, is 6 ins. greater.

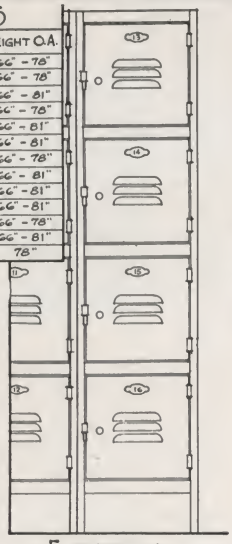
DETAILS OF TYPICAL DURABILT LOCKER INSTALLATIONS



PREFERRED SIZES

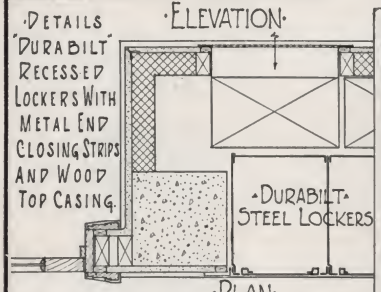
WIDE	DEEP	HIGH	TO ASSEMBLE	HEIGHT O.A.
12"	12"	12"	3-6 HIGH	66" - 78"
12	15	12	5-6 "	66" - 78"
12	15	15	4-5 "	66" - 81"
12	18	12	5-6 "	66" - 78"
15	12	15	4-5 "	66" - 81"
15	15	15	4-5 "	66" - 81"
15	18	12	5-6 "	66" - 78"
15	18	15	4-5 "	66" - 81"
15	21	15	4-5 "	66" - 81"
18	15	15	4-5 "	66" - 81"
18	18	12	5-6 "	66" - 78"
18	18	15	4-5 "	66" - 81"
18	18	18	4 "	78"

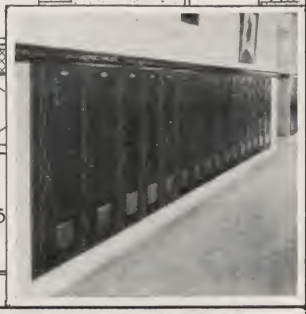


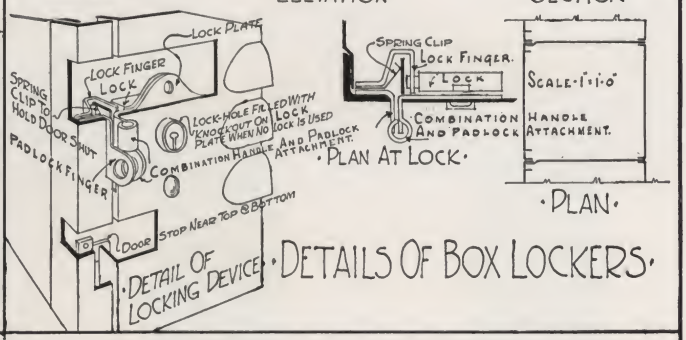


·ELEVATION· ·SECTION·

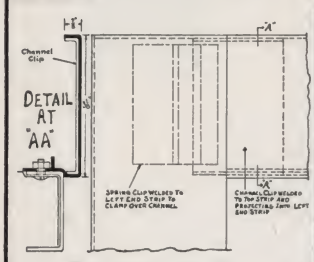
·DETAILS "DURABILT" RECESSED LOCKERS WITH METAL END CLOSING STRIPS AND WOOD TOP CASING.





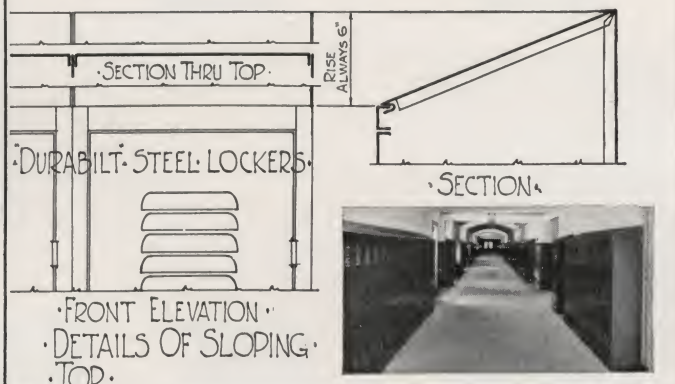


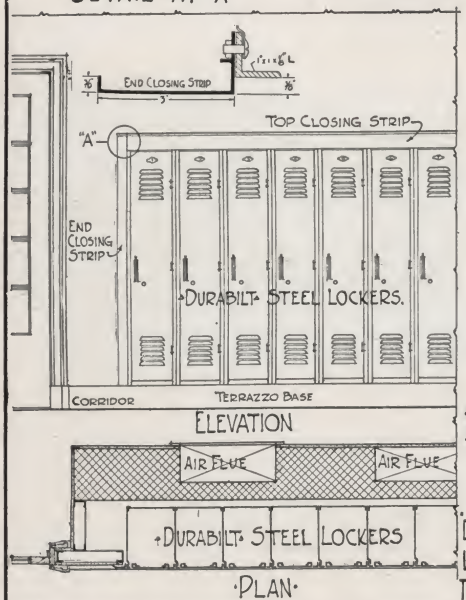
·DETAILS OF BOX LOCKERS·

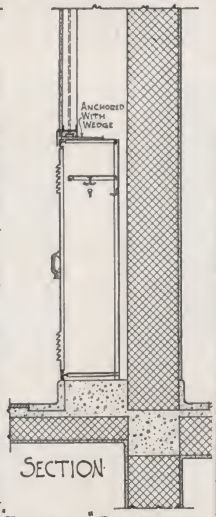


DETAIL AT "A"

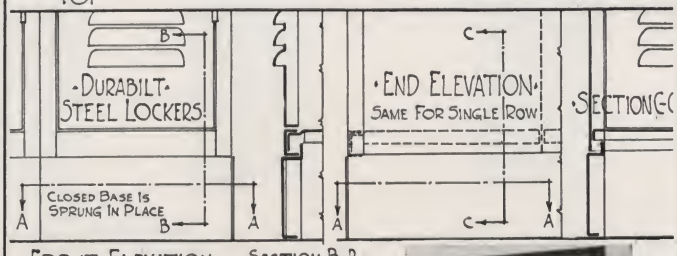






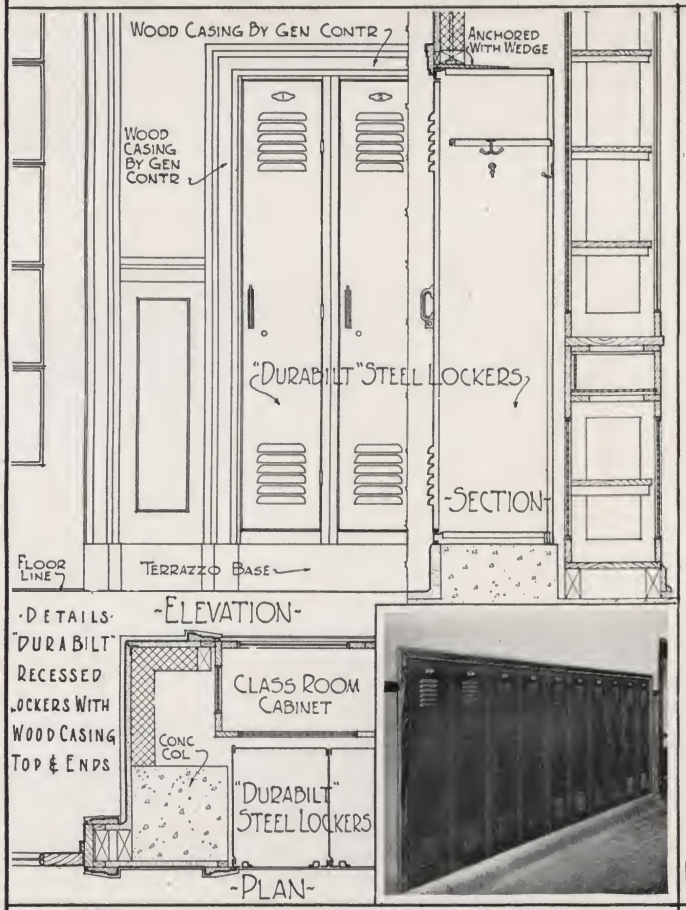


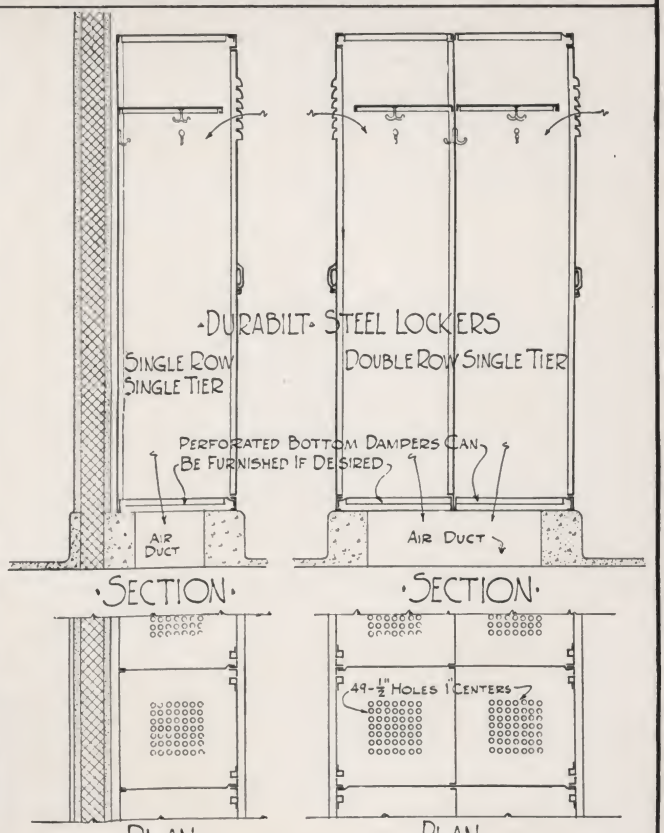
·DURABILT RECESSED LOCKERS WITH METAL TOP AND END CLOSING STRIPS



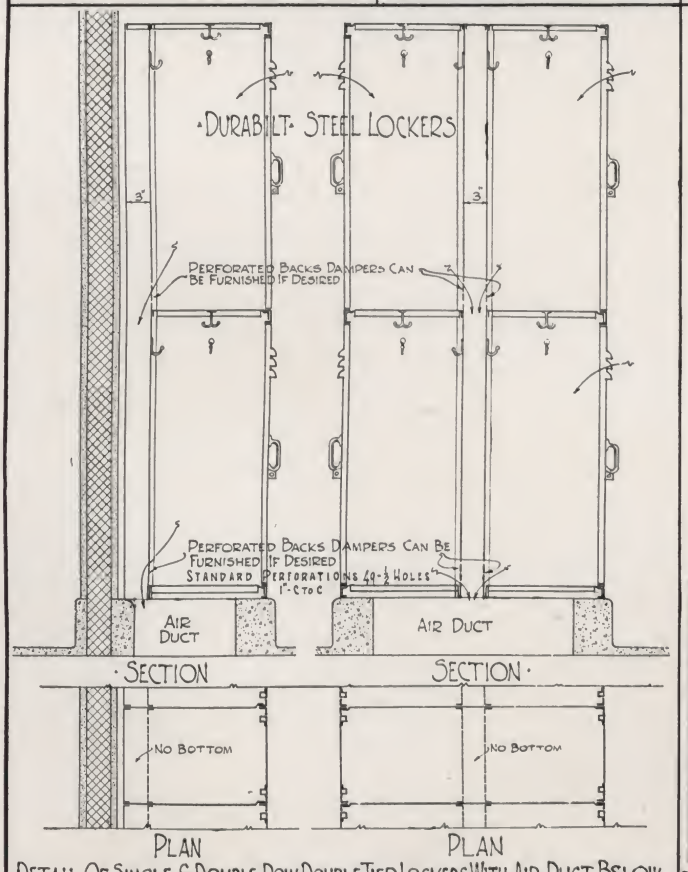


DETAILS OF TYPICAL DURABILT LOCKER INSTALLATIONS

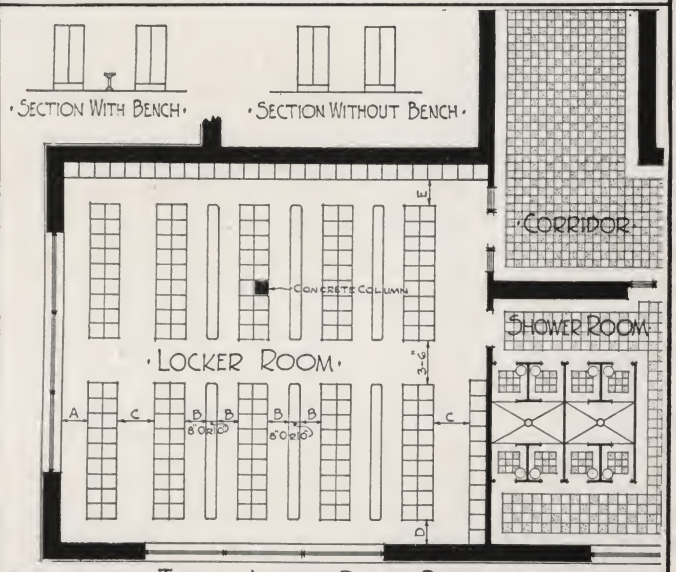




DETAILS OF SINGLE AND DOUBLE ROW SINGLE TIER LOCKERS WITH AIR DUCTS BELOW.



DETAIL OF SINGLE & DOUBLE ROW DOUBLE TIER LOCKERS WITH AIR DUCT BELOW.



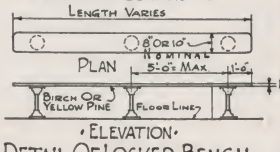
TYPICAL LOCKER ROOM PLAN



SINGLE TIER LOCKERS.

RECOMMENDED DIMENSIONS

"A" WIDTH OF LOCKER + 12"
"B" WIDTH OF LOCKER + 6"
"C" 2 x WIDTH OF LOCKER + 6"
"D" AT LEAST 24"
"E" WIDTH OF LOCKER + 18"



DETAIL OF LOCKER BENCH.



DOUBLE TIER LOCKERS

GENERAL OR "OPEN" SPECIFICATIONS

STANDARD LOCKERS

Doors—Shall be of No. 20 gauge steel adequately reinforced and stiffened with welded tubular reinforcements at each vertical edge, with top and bottom edges hemmed 1½ ins. and flanged ¾ in. and welded at corners; or may be of 16-gauge steel with tubular reinforcement to house locking mechanism and flanged on other three edges. Steel for doors shall be full cold-rolled patent-level enameling stock, or equivalent, free from surface irregularities and capable of taking a high grade enamel finish.

Door Frames—Uprights shall be 1x1x⅛-in. hard steel angles, or approved construction of equal strength. Cross members shall be 1½x¾-in. No. 14 gauge formed steel channels, joined to uprights at each end by two ⅜-in. countersunk head rivets or by welding; or may be of steel angle or other approved construction of sufficient strength to form a substantial rigid frame.

Body—Sides, backs, tops, bottoms and shelves shall be no lighter than No. 24 gauge cold-rolled steel.

Locking Device—Shall be simple, substantial and tamper-proof preferably of the "concealed, one-piece" type, with Automatic Locking Bar Release and rubber silencers, operated by stamped steel (not cast) straight lift handle, latching automatically when the door is closed without lifting or operating the handle. There shall be three locking points on both single and double tier lockers, the points of contact to be directly opposite the hinges. All doors shall be provided with a padlocking attachment consisting of a plate with hasp attached to the door adjacent to a hole in the handle so the handle cannot be operated when padlock is affixed (unless hereinafter specified padlocks are not included in these specifications).

Locks—All lockers shall be furnished with master keyed flat key (grooved key or paracentric may be specified if desired) locks of standard manufacture with two keys for each lock (if combination locks are called for they should be of a size and type interchangeable with the standard flat key locks). (Padlocks either of flat key type or combination type can be furnished when specified.) Locks attached without exposed bolt heads are preferred.

Hinges—Shall be of the type known as full-looped, with five knuckles and shall be at least 1½ ins. in width, attached to the door frame with two ⅜-in. countersunk head rivets and to door with two 14-20 binder head machine screws and nuts. If "butt" hinges are used, they shall be sufficiently larger and heavier to afford equal strength. All hinges shall be so positioned that pins cannot be driven out. There shall be three hinges, preferably with hinge reinforcement plates, on both single tier and double tier locker doors.

Legs—Where called for, legs shall extend at least 4½ ins. clear below cross member of door frame. Front legs shall be integral with frame and be provided with detachable adjustable floor plates and the rear legs shall be individually adjustable for height. (When specified on lockers with legs—closed bases are to be furnished for the fronts and ends of locker sections. These shall be no lighter than No. 20 gauge cold-rolled steel and so attached to present a neat appearance, preferably without any exposed bolt heads).

Note: When lockers are to be placed on raised bases, they should be furnished without legs.

Tops—All lockers shall have flat tops (unless sloping tops are specified).

Ventilation—*(Standard—Doors Only)* Doors shall have standard louvre perforations, not less than six louvres near top and bottom of single tier lockers, and three near top and bottom of double tier lockers.

(Alternates—Doors Only) (a) Doors shall have a block of forty-nine ½-in. round holes on 1-in. centers, or equivalent, near top and bottom.

(b) Doors shall have louvre perforations their full length.

(c) Doors shall have ½-in. round holes on 1-in. centers, or equivalent, their full length.

(Special Ventilation—When Specified) (a) Single Tier Ventilated Types.

(1) Tops (or backs near top) of lockers shall have a block of forty-nine ½-in. round holes on 1-in. centers, or equivalent. Louvres near top of doors shall be omitted.

(2) Bottoms (or backs near bottom) of lockers shall have a block of forty-nine ½-in. round holes on 1-in. centers, or equivalent. Louvres near bottom of doors shall be omitted.

(b) Double Tier Ventilated Types.

(1) Tops and Intermediate Tops (or backs near top) of lockers shall each have a block of forty-nine ½-in. round holes on 1-in. centers, or equivalent. Louvres shall be omitted from doors except at bottom of lower door.

(2) Bottoms and Intermediate Bottoms (or backs near bottom) of lockers shall each have a block of forty-nine ½-in. round holes on 1-in. centers, or equivalent. Louvres shall be omitted from doors except at top of upper door.

(3) Single Row Double Tier lockers shall be provided with a 3-in. ventilating space behind regular back connecting with an air duct beneath lockers (air duct by others). Ventilating space shall be formed by extending ends and tops 3 ins. beyond nominal dimensions at back and providing an extra back, or equivalent arrangement. Regular backs shall have a block of forty-nine ½-in. round holes on 1-in. centers, or equivalent, near bottom of each locker. Louvres near bottom of doors shall be omitted.

(4) Double Row Double Tier Lockers shall be assembled in single row arrangement providing a 3-in. ventilating space between backs of lockers. This space shall be formed by extending the tops and ends 3 ins. beyond nominal dimensions at the back, or equivalent arrangement, and shall be connected with air duct beneath lockers (air duct by others). Backs of lockers shall have a block of forty-nine ½-in. round holes on 1-in. centers, or equivalent, near bottom. Louvres near bottom of doors are to be omitted.

Note: Adjustable damper plates can be furnished with round hole perforations when specified.

Equipment—Single tier lockers shall have one hat shelf, approximately 9 ins. below top of locker, double tier lockers none. All lockers shall have one double prong ceiling hook and at least one single prong side hook on each side and back, preferably of the type that are attached with two screws.

Finish—All lockers shall be finished with "school furniture" brown or olive green baked enamel. (Other colors at reasonable extra cost, when specified.) Door handles and padlock attachments udylite plated finish. Coat hooks shall be of cadmium or udylite finish or otherwise thoroughly rust proofed. All screws and nuts shall be rust proofed by the Udylite or Parker process. Where screw heads are visible on outside of locker, they shall be of the slotless or binder-head type.

Number Plates—Each locker shall have a brass satin nickel finished, or aluminum number plate with black filled depressed numbers not less than 7/16 in. high; plates to be attached with split rivets.

Workmanship—Shall be of strictly high grade character throughout. All like parts shall be standard and interchangeable, accurately formed and correctly fitted.

Because of the increased demand for lockers recessed in the corridor walls, we list below typical specification clauses for the various standard arrangements, viz.:

Metal Top and End Strips—Lockers are to be placed in recesses provided for them, and the locker contractor is to furnish recess finishing strips to cover the gap at the ends and across the top of each locker section. These strips are to be made of No. 16 gauge full cold-rolled, patent leveled special enameling steel approximately 3 ins. wide so attached to present a neat smooth finish, preferably with concealed joint clips where top strips or top and end strips join together.

Wood Top and Metal End Strips—Lockers are to be placed in recesses provided for them and the locker contractor is to furnish recess finishing strips to cover the gaps at the ends of each locker section. These strips are to be made of No. 16 gauge full cold-rolled, patent leveled special enameling steel approximately 3 ins. wide so attached to present a neat smooth finish. Wood recess closing strips are to be furnished to cover the gaps across the top of each locker section by the general contractor.

Wood Top and End Strips—The lockers are to be placed in recesses provided but the gaps at the ends and across the top of each locker section are to be covered by wood moulding not included in these specifications.

MULTIPLE TIER (BOX) LOCKERS

Doors—Shall be made of not less than No. 16 gauge steel, flanged on all edges. Steel for doors shall be full cold-rolled, patent-leveled enameling stock, or equivalent, free from surface irregularities and capable of taking a high grade enamel finish.

Door Frames—Uprights shall be 1x1x⅛-in. hard steel angles or approved construction of equal strength. Top and bottom cross members shall be 1½x¾-in. No. 14 gauge formed steel channels and intermediate cross members between door openings shall be 1½x¾-in. No. 20 gauge formed steel channels, joined to uprights at each end by two ⅜-in. countersunk head rivets or by welding, or may be of steel angle or other approved construction of sufficient strength to form a substantial rigid frame.

Body—Sides, backs, tops and bottoms—*same as Standard Lockers.*

Locking Device—Shall be simple, substantial, and tamper-proof, preferably with neatly formed stamped steel (not cast) straight pull curl handle combined with padlocking attachment consisting of a plate with hasp attached to door adjacent to similar plate attached to frame so door cannot be opened when padlock is affixed. (Unless hereinafter specified padlocks are not included in these specifications.) When doors are closed, spring clips or other approved arrangement shall keep them shut.

Locks—*Same as for Standard Lockers.*

Hinges—*Same as for Standard Lockers, but replacing last sentence with:* There shall be at least two hinges on all box locker doors.

Legs—*Same as for Standard Lockers.*

Tops—*Same as for Standard Lockers.*

Ventilation—*(Standard—Doors Only)* Each door shall have not less than three louvre perforations near center of door. Louvres shall be preferably 6 ins. wide by ⅜ ins. deep to afford maximum circulation of air.

(Alternate—Doors Only) Each door shall have a block of forty-nine ½-in. round holes on 1-in. centers, or equivalent, near center of door.

(Special Ventilated Types—When Specified) (a) Each back shall have a block of forty-nine ½-in. round holes on 1-in. centers, or equivalent, in center of each compartment.

(b) Tops and intermediate tops shall have a block of forty-nine ½-in. round holes on 1-in. centers, or equivalent, near center of top.

(c) Bottoms and intermediate bottoms shall have a block of forty-nine ½-in. round holes on 1-in. centers, or equivalent, near center of bottoms.

Note: Combinations of above types of ventilation can be furnished when specified.

Equipment—No hooks or shelves included unless specified.

Finish—*Same as for Standard Lockers, but without mention of Door Handles, Padlock Attachments or Coat Hooks.*

Number Plates—*Same as for Standard Lockers.*

Workmanship—*Same as for Standard Lockers.*

COMBINATION (COMPARTMENT) LOCKERS

Doors—*Same as for Standard Lockers, adding:* Small doors shall be of not less than No. 16 gauge steel flanged on all edges.

Door Frames—*Angles same as for Multiple (Tier) Box Lockers.*

Body—*Same as for Standard Lockers.* Sides, backs, tops, bottoms and shelves shall be no lighter than No. 24 gauge cold-rolled steel.

Locking Devices—On large doors—*Balance same as for Standard Lockers.*

On small doors—*Balance same as for Multiple Tier (Box) Lockers.*

Locks—A. *(When used for Industrial, Office or Store Locker Rooms)* All small doors shall be furnished with masterkeyed series, pass key, flat key locks of standard manufacture with two keys for each lock which will also operate lock on large door.

B. *(When used in Gymnasium Locker Rooms)* All small doors only shall be furnished with combination padlocks (or, masterkeyed flat key padlocks of standard manufacture with two keys each).

Hinges—*Same as for Standard Lockers, but replacing last sentence with:* There shall be three hinges, preferably with hinge reinforcement plates, on both single tier and double tier locker doors, and two hinges on multiple tier (box) locker doors.

Legs—*Same as for Standard Lockers.*

Tops—*Same as for Standard Lockers.*

Ventilation—*(Standard—Doors Only)* Doors shall have standard louvre perforations, not less than six louvres near top and bottom of full length lockers; not less than three louvres near top and bottom of double tier lockers; and not less than three louvres near center of all box lockers. Louvres shall be preferably 4½ ins. wide and 3/16 in. deep to afford maximum circulation of air.

(Alternate—Doors Only) Doors shall have a block of forty-nine ½-in. round holes on 1-in. centers, or equivalent, near top and bottom of full length and double tier lockers and one block near center of door of all box lockers.

(Additional Door Ventilation—When Specified) A. Doors of all full length lockers and all double tier lockers shall have louvre perforations their full length. Box locker doors to have three louvres near center of door. Louvres shall be preferably 4½ ins. wide and 3/16 in. deep to afford maximum circulation of air.

B. Doors of all full length lockers and all double tier lockers shall have ½-in. round holes on 1-in. centers, or equivalent, their full length. Doors of box lockers shall have a block of forty-nine ½-in. round holes on 1-in. centers, or equivalent, near center of door.

(Special Ventilated Types—When Specified) A. Single row combinations of full length and double tier lockers shall be provided with a 3-in. ventilating space behind regular backs connecting with an air duct beneath lockers (air duct by others). Ventilating space shall be formed by extending tops and ends 3 ins. beyond nominal dimensions at the back or equivalent arrangement. Regular backs of all lockers shall have a block of forty-nine ½-in. round holes on 1-in. centers, or equivalent, near bottom of lockers. Louvres near bottom of doors shall be omitted.

B. Double row combinations of full length and double tier lockers shall be assembled in single row arrangements providing a 3-in. ventilating space between backs of lockers. This space shall be formed by extending the tops and ends 3 ins. beyond nominal dimensions at the back or equivalent arrangement, and shall be connected with air duct beneath lockers (air duct by others). Regular backs of all lockers shall have a block of forty-nine ½-in. round holes on 1-in. centers or equivalent, near bottom of lockers. Louvres near bottom of doors shall be omitted.

Note: Compartment lockers consisting of combination of full length or double tier lockers and box lockers may be specially ventilated as above except louvres in doors of box lockers not to be omitted, and backs of box lockers to have a block of forty-nine ½-in. round holes on 1-in. centers, or equivalent, near center of back.

Equipment—*(When Used in Gymnasium Locker Rooms)* Both single and double tier lockers shall have a double prong ceiling hook and at least one single prong side hook on each side and back, preferably of the type that are attached with two screws. Full length lockers shall have one hat shelf 9 ins. below top of locker.

(When Used in Industrial, Office or Store) Full length lockers shall have coat rod and six single prong side hooks.

Finish—Door handles and padlock attachments on large lockers, Udylite finish. Door handles and padlock attachments on small doors same finish as compartment lockers.

Number Plates—*Same as for Standard Lockers.*

Workmanship—*Same as for Standard Lockers.*

Sizes—(Dimensions are given in inches.)

W.xD.xH.	Ratio	Quantity and Size of Large Compartments	Quantity and Size of Small Compartments
INDUSTRIAL, OFFICE AND STORE			
36 x21x72	7 to 1	1 — 21x21x60	6 — 15x21x12 1 — 21x21x12
36 x18x72	7 to 1	1 — 21x18x60	6 — 15x18x12 1 — 21x18x12
54 x21x72	8 to 2	2 — 18x21x60	8 — 18x21x12
54 x18x72	8 to 2	2 — 18x18x60	8 — 18x18x12
GYMNASIUM			
34½x12x60	6 to 1	1 — 12x12x60	6 —7½x12x30
34½x15x60	6 to 1	1 — 12x15x60	6 —7½x15x30
30 x12x60	6 to 1	1 — 12x12x60	6 — 6x12x30
30 x15x60	6 to 1	1 — 12x15x60	6 — 6x15x30
24 x12x60	5 to 1	1 — 12x12x60	5 — 12x12x12
24 x15x60	5 to 1	1 — 12x15x60	5 — 12x15x12
24 x12x60	7 to 1	1 — 12x12x36	7 — 12x12x12
24 x15x60	7 to 1	1 — 12x15x36	7 — 12x15x12
24 x12x72	6 to 1	1 — 12x12x72	6 — 12x12x12
24 x15x72	6 to 1	1 — 12x15x72	6 — 12x15x12
24 x12x72	7 to 1	1 — 12x12x60	7 — 12x12x12
24 x15x72	7 to 1	1 — 12x15x60	7 — 12x15x12
36 x12x72	12 to 2	2 — 12x12x36	12 — 12x12x12
36 x15x72	12 to 2	2 — 12x15x36	12 — 12x15x12

BASKET RACKS AND BASKET TRUCKS

BASKET RACKS:

Uprights—Shall be open or "skeleton" type with 1x1x⅛-in. hard steel angles or equivalent front and rear, punched for attaching shelves and gussets. (Closed or "solid" type with No. 20 gauge cold-rolled steel between upright members can be furnished when specified.) Upright members shall not be more than 5½ ft. on centers.

Corner Gussets—(Furnished with skeleton type construction only.) Shall be No. 20 gauge steel punched for attaching to uprights and shelves at ends and rear of open or "skeleton" type sections.

Basket Separators—Shall be wing type made of not less than No. 20 gauge special enameling steel bolted to under side of shelves, making individual compartments.

Shelves—Shall be of not less than No. 20 gauge special enameling steel adequately reinforced and having a wide flange at rear to serve as a back stop for baskets.

Backs—Shall be open or "skeleton" type to allow for maximum air circulation. (Closed or "solid" type with not less than No. 20 gauge steel between uprights can be furnished if specified.)

Size of Racks—(Racks may vary to accommodate 30 to 48 baskets each. See page 8 for dimensions.)

BASKET TRUCKS:

Uprights—Shall be full 1x1x⅛-in. hard steel angles or equivalent, punched for attaching shelves and solid end panels. Upright members shall be spaced not more than 6½ ft. over all.

Ends—To be closed or "solid" type, with No. 20 gauge cold-rolled special enameling steel, bolted between upright members.

Dividers—Truck shall be 27 ins. deep over all, with No. 20 gauge cold-rolled special enameling steel, solid lengthwise divider, making 13½ ins. deep basket openings on either side of truck.

Shelves—Shall be of not less than No. 20 gauge cold-rolled special enameling steel adequately reinforced with 1¼-in. flanges front and rear. Bottom shelf to have 1x1x⅛-in. angle reinforcement bolted inside of flanges, front and rear.

Basket Separator—Shall be winged type of not less than No. 20 gauge special enameling steel, bolted to under side of shelves, making individual compartments.

Casters—Each truck shall have four roller bearing casters (two swivel casters at one end and two stationary casters at the other), wheels not less than 3⅛ ins. in diameter. Casters shall be securely bolted to No. 16 gauge reinforcing plate attached to bottom shelf—said plate to be 6½ ins. wide and to extend entire depth of truck at each end; or construction of equivalent strength.

Size of Trucks—(Trucks may vary to have a capacity of 60 to 84 baskets each. See page 8 for dimensions.)

The following applies to both Racks and Trucks:

Padlock Hasps—Shall be of net less than No. 16 gauge steel formed to provide a secure means of locking the baskets in position.

Number Plates—Each basket opening shall have nickel plated, polished brass or aluminum number plate with black filled depressed numbers not less than 3/16 in. high, plates to be securely attached to the shelves.

Bolts and Nuts—Shall be rust-proofed by the Udylite or Parker process. All outside bolt heads shall be of the slotless or binder head type.

Finish—Racks shall be finished with olive green, or "school furniture" brown baked enamel. (Other colors at reasonable extra cost when specified.)

Workmanship—*Same as for Standard Lockers.*

WIRE BASKETS:

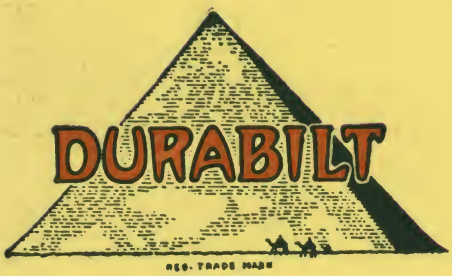
Shall be made of No. 15 gauge wire woven on 1 in. square mesh, reinforced with 3/16-in. wire around top and ⅛-in. wire at upright corners and diagonally across bottom. Baskets shall have a brass, satin nickel finished or aluminum number plate with black filled depressed numbers; and shall be provided with loop for padlock attachment and finished with heavy coating of tin after manufacture. Standard sizes 8½ in. wide x 13 in. deep x 8½ in. high, or 11½ in. wide x 13 in. deep x 8½ in. high.

Instructions for Erecting

We can erect lockers in the field, or furnish erection superintendent to supervise other workmen in erecting the lockers. Comprehensive instructions, however, are supplied with each order of lockers which enable customers to effect economies by handling their own installations.

DURABILT

STEEL LOCKERS AND CABINETS



DURABILT STEEL LOCKER CO. AURORA, ILLINOIS

PENN METAL CO. of PENNA.

Manufacturers of Steel Lockers, Shelving and Cabinets

Oregon Avenue and Swanson Street, PHILADELPHIA, PA.

DISTRICT OFFICES

NEW YORK, N. Y., 41 East 42nd Street — BALTIMORE, MD., 629 Munsey Building — BOSTON, MASS., 141 Milk Street

Products

PENCO STEEL LOCKERS, SHELVING and CABINETS, METAL CEILINGS, TINCLAD and KALAMEIN DOORS.

1869 Penco FOR PERMANENCE

TRADE-MARK

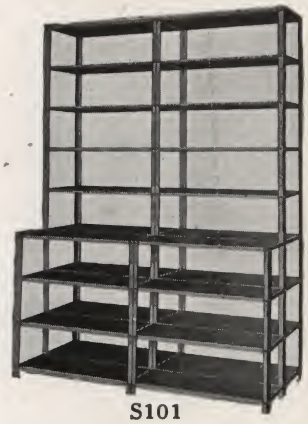
Sixty-two Years' Experience at Your Service

A force of engineers with a background of 62 years' experience in design, fabrication and installation will submit layouts, recommendations and estimates without obligation.

Penco Steel Shelves

Simple, durable, exceptionally strong and fully interchangeable. Readily erected with the aid of only a screwdriver. Quickly disassembled and re-erected.

Penco Standard Specifications—Uprights made of No. 14 gauge cold formed angles, 3, 6, 7, 8, 9 and 10 ft. high. A combination of the above will give any desired height. Punched for 2-in. adjustment.



S101



S104

Shelves are 9, 12, 15, 18, 24, 30 and 36 in. deep, 24, 30, 36, 42, and 48 in. wide, made of No. 18 gauge steel. Reinforcing angles are supplied for heavy duty shelving. The 24 and 30-in. widths are used to fill out shelving in lengths not a multiple of 36 in.

Flat steel backs and divisions, same heights as uprights, are punched for attaching to flanges of the uprights and shelves, and at equal distances from top and bottom edges to make them reversible.

Dividers of No. 24 gauge are 6, 8, 10, 12, 14, 16, 18 and 24 in. high by all shelf depths. (Flanged top and bottom for bolting to adjoining shelves). Beaded front and back.

Bin fronts (with continuous label holders when desired) are readily attached to uprights by steel clips.

Counter shelves and hinged doors with locks also supplied.

Finish is olive green baked enamel. Special finishes at additional cost.

Special shelving made in accordance with specifications or requirements. Blue prints and estimates on request.

Penco Tinclad and Kalamein Doors



Tinclad Door

Standard equipment in office buildings, hotels, apartments, schools, hospitals, etc. Made to exact specification in any size or type, and installed by experts.



Kalamein Door

Penco Steel Lockers

Penco steel lockers are made of cold rolled steel, in single tier (full height) and double tier (half height), either in banks one row deep or in double rows (back to back).



50U2

STANDARD SIZES OF PENCO STEEL LOCKERS
(Width x depth x height, in.)

Single tier	Double tier
*12x12x60	*12x12x36
*12x15x60	*12x15x36
*15x15x60	12x12x42
*12x12x72	12x15x42
*12x15x72	
*15x15x72	
*15x18x72	
*18x18x72	
*24x24x72	

*Carried in stock for immediate shipment.

Sizes other than those listed above will be made to order. Write for prices.

Sides and backs are made of No. 24 gauge steel, or when specified, of expanded metal.

Tops, bottoms and shelves are made of No. 24 gauge steel doors reinforced on all edges, with ventilating louvres as illustrated, or with expanded metal.

Equipped with top shelf, gravity latch locking device and master-keyed cylinder lock.

Wall hooks supplied in single tier lockers (full height) and double tier (half height).

All lockers are supplied with 6-in. legs of 1x1x⅛-in. steel angle. Adjustable shoes permit leveling on uneven floors.

All Penco Lockers are accurately punched for quick assembly. Finish is olive green baked enamel; special finish at additional cost.



No. 201

Penco Steel Cabinets

Several types—two-door, single door, desk, counter high, and wardrobe.

Standard finishes—olive green, walnut and mahogany—baked on.



No. 200



No. 202

Penco cabinets are unusually serviceable and an ornament as well. They embody every feature of the well-known Penco locker line.

Penco Ceilings

A pattern for every purpose.

Experienced designers will submit sketches and suggestions for most practical treatment.

Penco ceiling is rigid, clear stamped and square sheared. Contracts for Penco installation—*thermalizing* and final decoration, carry assurance of complete satisfaction. Thousands of such contracts prove it.



ART METAL CONSTRUCTION COMPANY

GENERAL OFFICES AND FACTORIES

JAMESTOWN, N. Y.

For Branch Offices, see Art Metal Bank Equipment Page

For Art Metal Hollow Metal Doors and Trim, Ornamental Bronze Work, Bank, Office, Library and Hospital Equipment, see Art Metal Construction Company in Manufacturers' Index

ART METAL VERTICAL UNIT PARTITIONS

Construction Details

The posts or pilasters consist of two members—a three-side post formation with snap-on removable moulding on the fourth side.

All shapes are made from best grade cold-rolled steel and are roller-drawn, producing clean angles and true profiles.

TRADE-MARK

All units are keyed to posts, three keys to each side of unit.

For detailed construction, profiles of moulds, and gauges of materials used, see drawings.

Dimensions

Units are made in the following sizes in width: 20 in., 30 in., 40 in., and 50 in. Larger units when specified must be specially built. We recommend the use of stock sizes.

Cornice is made in the following lengths: 40 in., 60 in., 70 in., 100 in., 120 in., and 200 in. straight lengths, 40 in. mitered both ways, and coped lengths: 20 in., 30 in., 40 in., and 50 in.

Cornice height partition is 7 ft. 3½ in. high. This height permits the use of our regular standard height door.

Doors and Transoms

All doors are built for standardized hardware, such as hinges, lock, and door check.

Transoms are built for special concealed center-hung operator or center-hung friction pivot.

Wall and Ceiling Fillers

Standard ceiling filler consists of ⅛ Asbestos Mill Board cut to suit layout of partition. Steel fillers will be supplied as alternate if desired.

Wall fillers are made in multiples of 1 in. starting with 5 in. up to and including 10 in. centers of posts. Fillers are fastened to the wall by means of pressure bolts.

Glazing

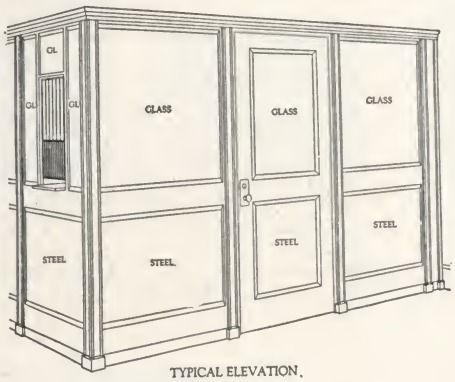
Partition is built to receive glass in the following thicknesses: ⅛ in. double thick, $\frac{3}{16}$ in. polished plate, ¼ in. polished plate, or any make of figured glass not exceeding $\frac{5}{16}$ in. in thickness. All glass is set in special plastic putty.

Erection

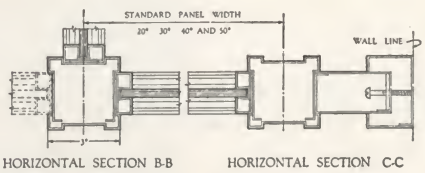
Art Metal Vertical Unit Partition is easily erected because it has fewer parts than any other make of partition on the market.

Wiring

All openings in partition for wiring are made large enough to accommodate two ¾-in. cables in all directions except in posts having concealed transom operators.



TYPICAL ELEVATION.



HORIZONTAL SECTION B-B HORIZONTAL SECTION C-C

Art Metal Partition—Types "D" and "F"

Type D

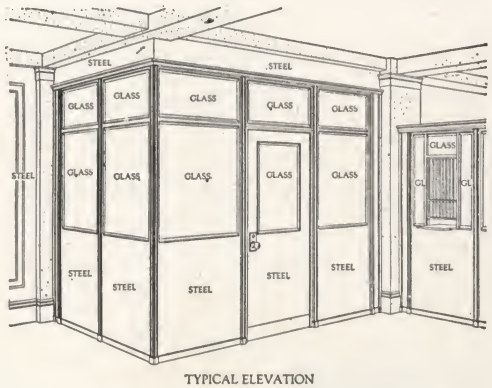
This partition is constructed as shown with double steel panels having insulation between.

Type F

This construction is identical with Type D except that single steel panels are used and set in rubber channels.

Type E

This partition is distinguished by flush type panels and a beveled post design. The construction details are the same as Type D.


STEEL
STEEL
GLASS
GLASS
GLASS

SPECIFICATIONS FOR ART METAL VERTICAL UNIT PARTITIONS

Steel Partitions—Where indicated on drawings (or mention locations) steel and glass partitions shall be installed, consisting of steel posts or pilasters, steel lower panels, glazed upper panels, (transom) and continuous steel cornice, (with asbestos mill board [or steel] filler to ceiling).

Manufacturer—All steel partitions shall be Art Metal Vertical Unit Partitions, as manufactured by the Art Metal Construction Company, Jamestown, N. Y.

Construction Details—Posts or pilasters shall consist of two members having a three-side post formation with snap-on removable moulding on the fourth side.

All shapes shall be made from best grade cold-rolled steel, rolled drawn, and shall have clean angles and true profiles.

Units shall be keyed to posts, three keys to each side of post.

All steel shapes shall be constructed of not lighter than No. 18 gauge steel plate, excepting the panels, mouldings and filler plates, which may be No. 20 gauge.

Profiles of moulds shall be in accordance with Art Metal Construction Company's stock designs.

Panel Units—Panel units shall be (specify type of panel desired).

Type D panels, consisting of double steel panels having insulating material between.

Type F panels, consisting of single steel panels of No. 12 (or No. 16) gauge steel plate, set in rubber channels.

Type E panels, consisting of double flush-type panels with all exposed surfaces flush.

Dimensions—The panels shall be made to suit the spacing of pilasters, in stock sizes, which are: 20 in., 30 in., 40 in. and 50 in., in width. (Larger units when specified must be specially built.)

Cornices shall be made in the following lengths: 40 in., 60 in., 70 in., 100 in., 120 in., and 200 in., straight lengths, 40 in. mitered both ways; coped lengths: 20 in., 30 in., 40 in., and 50 in.

Partition height shall be 7 ft. 3½ in. (except where transoms are required).

Ceiling Fillers—The space between top of cornice and ceiling shall be enclosed with double thickness of ⅛-in. asbestos mill board secured to wood strips and cut to suit layout of partition and ceiling.

(Alternate.) The space between top of cornice and ceiling shall be enclosed with a double thickness of No. 20 gauge steel, cut to suit layout of partition and ceiling.

Wall Fillers—Wall fillers shall be made in multiples of 1 in. up to and including 10 in. centers of posts. Fillers shall be fastened to the wall by means of pressure bolts.

Transoms—Where transoms are required, the height of cornice shall be raised to (specify height). All transoms over doors shall be pivoted transoms. (Specify whether transoms over panels are to be fixed or pivoted.)

Doors—Provide doors where indicated of the following sizes: (specify sizes). All doors shall have upper panels glazed.

Glazing—All upper panels, transoms and doors shall be glazed with (specify kind of glass desired). All glass shall be set in special plastic putty.

Hardware—All doors shall be equipped with one pair of 4½x4½-in. butts, door checks and cylinder type (or bitted key) locks of standard design and highest quality, as manufactured by (mention name of manufacturer).

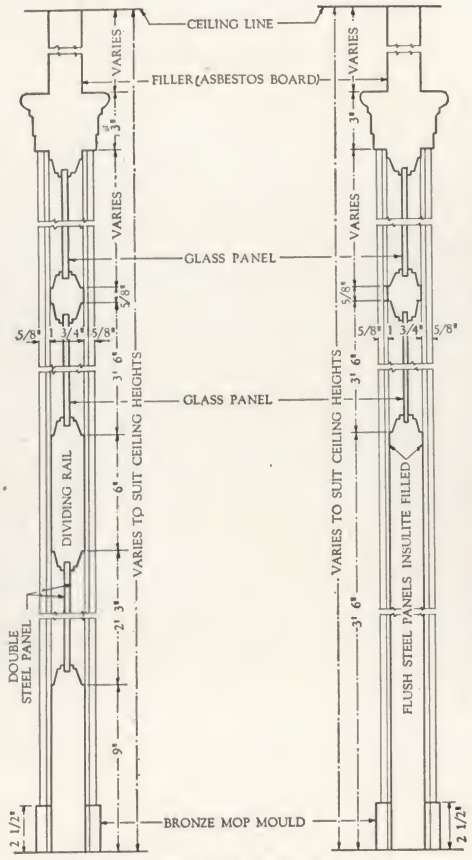
Wiring—Openings shall be provided where shown or directed large enough to accommodate two ¾-in. cables.

Finish—All concealed members shall be given at least one coat of rust inhibiting paint. All exposed surfaces shall be finished in baked enamel, selected color, equal to standard finishes.

Erection—The partitions shall be erected with a minimum of floor fastenings and without the use of screw fastenings into walls, columns or ceilings, except in the case of free-standing partitions, which must necessarily be fastened to walls or columns. In such cases screw fastenings will be permitted to secure the cornice member to the walls or columns. No other defacements of the plaster on walls, columns or ceiling will be permitted. The partitions shall be rigidly held in place by means of jack screws engaging against steel shields to protect the plaster, thus making it possible to remove any partition without unnecessary defacement of walls, columns or ceilings.



Partition Forming Corridor, New York State Office Building, New York, N. Y.



Vertical Sections Art Metal Partitions Type "D" and Type "E"

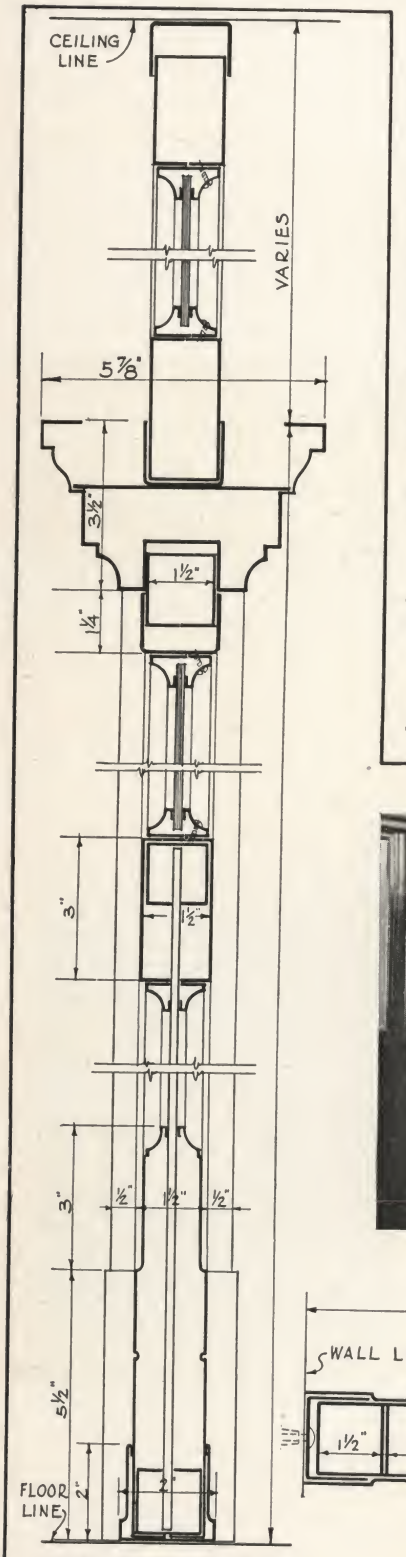


Close-up View of Partition, New York State Office Building, Albany, N. Y.

ALL-METAL PARTITION CO. INC.

50 West 22nd Street,
NEW YORK, N. Y.

A NEW TYPE OF TUBULAR FRAME PARTITION CONSTRUCTION



· VERTICAL · SECTION ·

Here is a new type partition construction, that combines compactness with unusual strength or stiffness. "All-Metal" Partitions not only take up less room but they are also economical in first cost. They are readily taken down, and rearranged. Transoms, grilles, wickets are easily built in.

Construction—"All-Metal" Partitions are built entirely of steel in interchangeable sections of various widths and lengths. Door sections, also, are interchangeable with sections of same size. Frames are tubular steel and welded at all joints. Panels are set into the tubes for the entire depth of the tube. Sections are securely held together by spacer clips which act as a clamp for the pilasters. Base, chair rail, top rail securely welded in. Cornices are continuous and held rigidly in place by concealed fastenings. No exposed bolts or screws used in erection.

Types—There are 6 distinct types of "All-Metal" Partitions. Each with its distinct use and application. We will gladly submit details, prints, etc., upon request.

Finishes—Sections can be had in any of the wood grain finishes, or standard colors in baked enamel or lacquer.

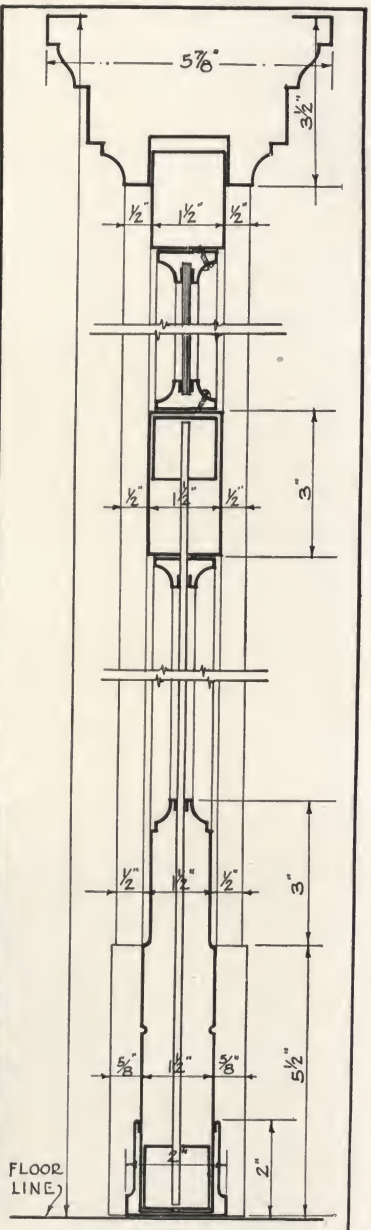
Service

The "All-Metal" service department will always cooperate and advise on your partition problems and gladly submit estimates. Catalogue sent on request.

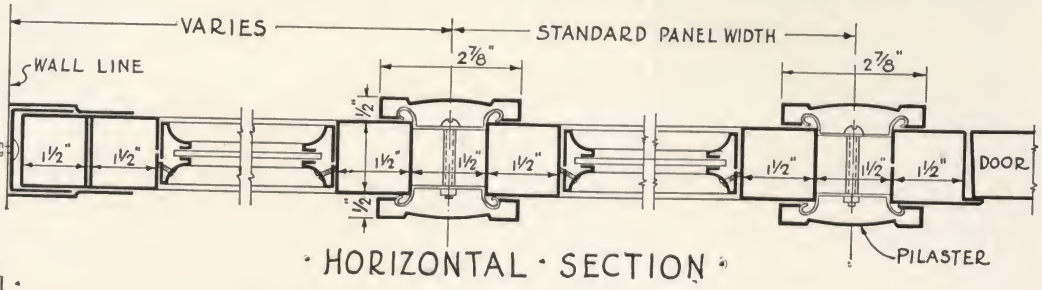
Other Products

Our other products include Adjustable Steel Shelving, Steel Cabinets and Steel Office Railing.





· VERTICAL · SECTION ·



· HORIZONTAL · SECTION ·

3 IN. SCALE DETAILS OF CORNICE HEIGHT AND CEILING HEIGHT PARTITIONS

DAHLSTROM METALLIC DOOR COMPANY

Manufacturers of Distinctive Steel Walls Both Flush and Moulded Types

EXECUTIVE OFFICES AND FACTORIES

JAMESTOWN, N. Y.

BRANCHES IN ALL PRINCIPAL CITIES



For Complete Specifications and Details on Dahlstrom Partitions, see the Complete Dahlstrom Catalogue listed in the Manufacturers' Index

SNEAD & COMPANY

FOUNDED IN 1849

Manufacturers of Steel and Glass Office Partitions

FACTORY, MAIN OFFICE AND WAREHOUSE
100 Pine Street, JERSEY CITY, N. J.

TELEPHONE
MOntgomery 5-6200

CABLE ADDRESS
"Sneadco, Jersey City"

NEW YORK OFFICE: 205 East 42nd Street— Telephone, Murray Hill 4-3582

SALES AGENTS IN ALL PRINCIPAL CITIES

For pages on Floor Armor-Grids and Metal Bookstacks for Libraries, see Manufacturers' Index

Advantages of Snead Partitions

The design of Snead Partitions is based on over 82 years' experience manufacturing metal products for the building industry, and offers these advantages:

Sound design. Rigid construction. No maintenance cost.
Non-combustible material. Cemented packed panels.
Adaptability to space requirements.
Extreme ease in moving and rearranging.
Concealed chases for wiring. Harmonious finishes.
Minimum dust collecting surfaces.
Competent engineering service.
Immediate delivery by truck from large stock at factory to New York metropolitan area.



Privacy, Light and Ventilation

Ceiling-high partition with obscure glass in middle panel and clear glass in upper panel. Continuous top filler readily lends itself to fit around all irregularities encountered



An Interesting Treatment of a Private Office

Standard sections form interior walls. Paneling of solid steel is carried around outer wall and window. Radiators enclosed by decorative grilles integral with partitions and wainscoting enclosing columns



Close Up View of Office

Showing door detail and proportion of horizontal and vertical shapes. No bulky rails or heavy projecting lines mar rich beauty and symmetry of assembly



Low Partitions and Railings

Rigid railing harmonizing with Type "M" partitions. Railing controls traffic within office, increasing efficiency of available area

Specifications Snead Type "M" Standard Partitions

Steel—Best grade open hearth full cold rolled commercial furniture stock.

Flexibility—Sectional type partitions, completely flexible, allowing changes without disturbing units other than those to be rearranged. Double steel panels with sound-deadening cemented filler.

Dimensions—Standard panels range in width from 20 in. minimum, center to center of pilasters, and increase by units of 5 in. up to 60 in., to secure most economical and balanced layout. Adjustable plinth at pilasters and adjustable mop strip at base insure snug fit at floor.

Cornice height of free standing partition is 7 ft. 2 in. Designed to receive superstructure without disturbing existing sections if extension to ceiling is desired at later date.

Ceiling height partitions have cornice carried to (a) 8 ft. 2½ in., 8 ft. 8½ in., (b) 9 ft. 2½ in., (c) 9 ft. 8½ in., (d) 10 ft. 2½ in., with double filler of mineral board extending from top of cornice to ceiling, neatly pointed up and painted to match ceiling.

Doors—Units are 40 in. wide for single doors and 60 in. for double doors. Doors are one (or two) panel, 1¾ in. thick.

Wiring—All horizontal and vertical members permit carrying wire, and also receive outlets and switches.

Glass—Bedded in putty to match partition finish. Held in place by removable strip without use of screws.

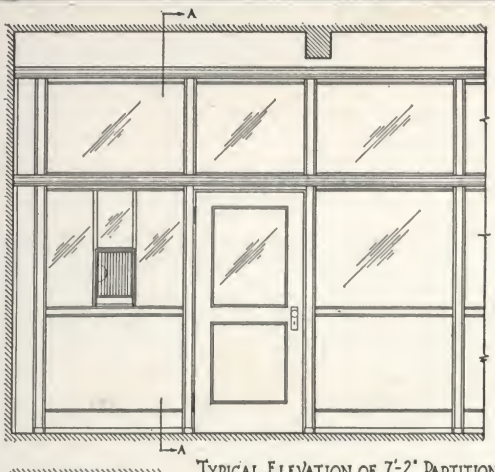
Hardware—Yale & Towne or equal. All locks, whether cylinder, bit key or communicating set, interchangeable. Natural bronze finish. Norton door checks or equal. One pair of butts to each door, 4½x4½-in. ball bearing, Stanley or equal.

Finish—All work thoroughly cleaned with varnolene and given two coats of enamel of color selected. Grained or stippled finishes applied at factory.

Installations

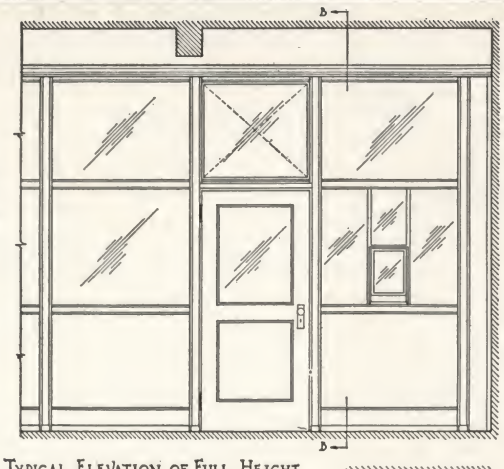
Snead Partitions are found in representative buildings throughout the United States and Canada, wherever engineering skill, architectural proportion and symmetry, beauty of finish, flexibility, and permanence are desired. Typical installations are:

American Can Co.; Bakelite Corp.; Bell Telephone Laboratories; Bradstreet Co.; Thomas A. Edison, Inc.; Graybar Electric Co.; Intertype Corp.; R. H. Macy & Co.; New York Telephone Co.; Postal Telegraph Co.; Rex Cole, Inc.; Southern Railway Co.; Standard Statistics, Inc.; Universal Pictures Corp.; Sears Roebuck Co.; U. S. Rubber Co.; Western Electric Co.; Western Union Telegraph Co.; Yale University; and many others.



Typical Elevation of 7'-2" Partition with Superstructure Above

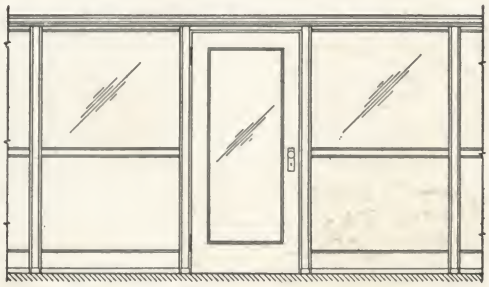
Insulated Sheet Steel Panels May Be Substituted For Glass Where Shown.



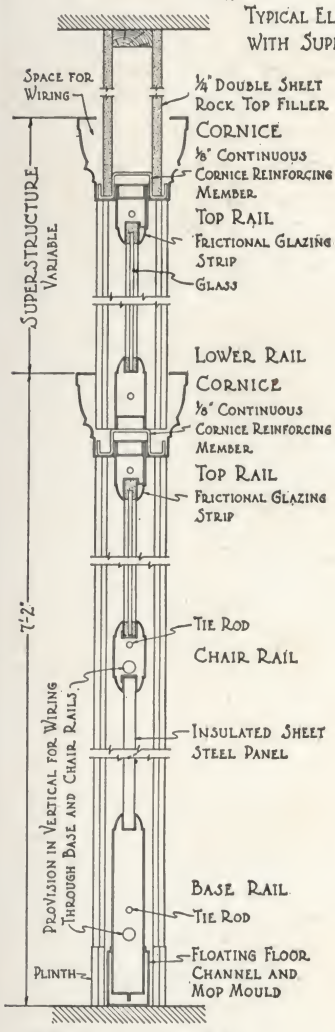
Typical Elevation of Full Height Partition

Horizontal Friction Pivot or Concealed Operator Transom Can Be Furnished in Any Panel.

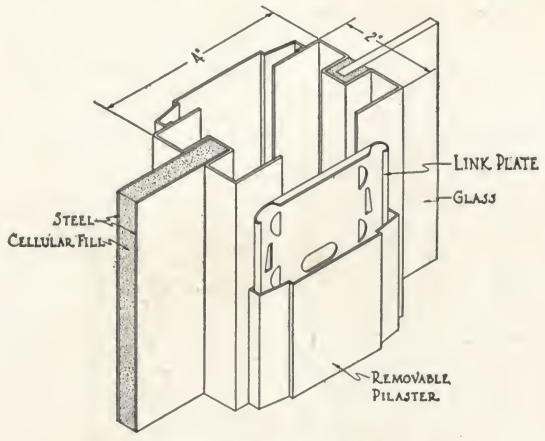
Office Railing To Match With Insulated Panel Furnished in Standard Panel Sizes 36" High With 4" Clearance at Floor.



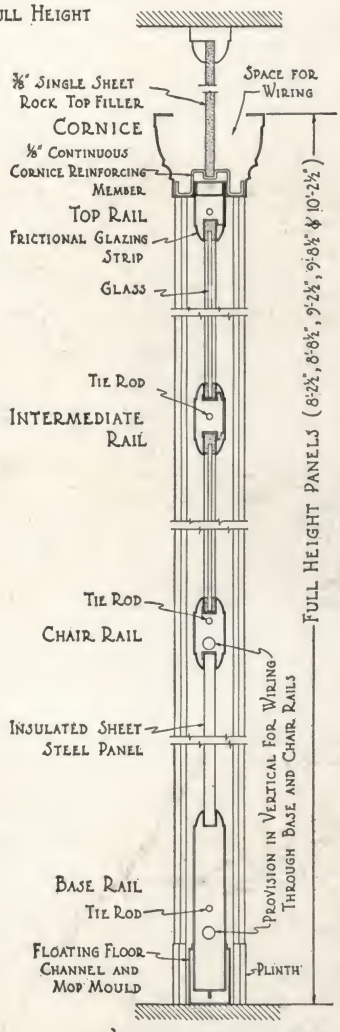
Typical Elevation of 7'-2" Partition



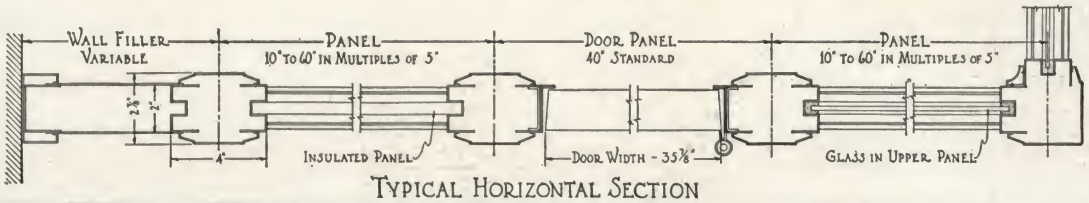
Vertical Section A-A



Typical Post Assembly



Vertical Section B-B



Typical Horizontal Section

SNEAD & CO.
founded 1849
JERSEY CITY
NEW YORK CITY

DETAILS
SNEAD OFFICE PARTITIONS

TYPE-M
INSULATED
PANEL
Sept. 1929

TAKAPART PRODUCTS COMPANY

FORMERLY THE TAKAPART DIVISION OF HYDE-MURPHY COMPANY

GENERAL OFFICES

114 East 32nd Street, NEW YORK, N. Y.

BRANCHES IN ALL PRINCIPAL CITIES

Products

PATENTED TAKAPART SECTIONAL PARTITIONS and RAILINGS in *Steel* or in *Wood* for Office and Industrial Use.

What Takapart Is

A high grade *sound-resisting* portable partition consisting of standard interchangeable units to take care of any layout both horizontally and vertically, and designed so that absolute rigidity is obtained irrespective of the length of the partition involved.

No long continuous cornices or bracing are required, for each section unit is complete in itself—complete cornice, chair rail, panel, and base.

Section units and section door units are of standard widths and are interchangeable with each other.

Sound Resistance

Takapart Steel Partitions are sound resistant because all possibility of vibration is eliminated by cushioning glass and insulating panels, wall and ceiling members.



One or a Thousand Sections Equally Rigid

Takapart units are joined together and held in a rigid upright position by a structural steel member provided at every unit and adjustable for various ceiling heights

Recent Installations

New York Telephone Company
Southern New England Tel. Co.
New Amsterdam Casualty Co.
Stone & Webster Building Corp.
Underwood Typewriter Company
Mt. Sinai Hospital
Pennsylvania R. R. Co.
Westchester Lighting Company
Syracuse Lighting Company
Central Hudson Gas & Elec. Co.
U. S. Government Appraisers' Stores, New York, N. Y.
City of Amsterdam, N. Y.



General View of Executive Offices of a Prominent Shipbuilding Corporation

This unusually long installation illustrates that, irrespective of the length involved, *Takapart* is always as straight as a die



Soundproof and Lightproof, Adjustable Wall Connection Members

Adjustable to any regular or irregular wall without cutting and fitting. Loose wall connection members are eliminated because metal tongues force the rubber channel to adapt itself to contour of wall. The flexible rubber channel leaves no openings between wall and partition



Puttyless Glass Moulding

Watch any glazier remove a light of glass that has been puttied in place and you will appreciate what an advantage it is to remove and install glass without putty. It is a simple matter when *Takapart* is used to change from one type of glass to another, or to change from glass to solid panels or vice versa



Units Added in Any Direction with No Cornice Miters, Copes, or Splices to Cut or Fit

Reducing or enlarging an office with *Takapart* means merely adding or deducting units without cutting any part whatsoever, as the individual strength members for each unit make continuous longitudinal cornices unnecessary



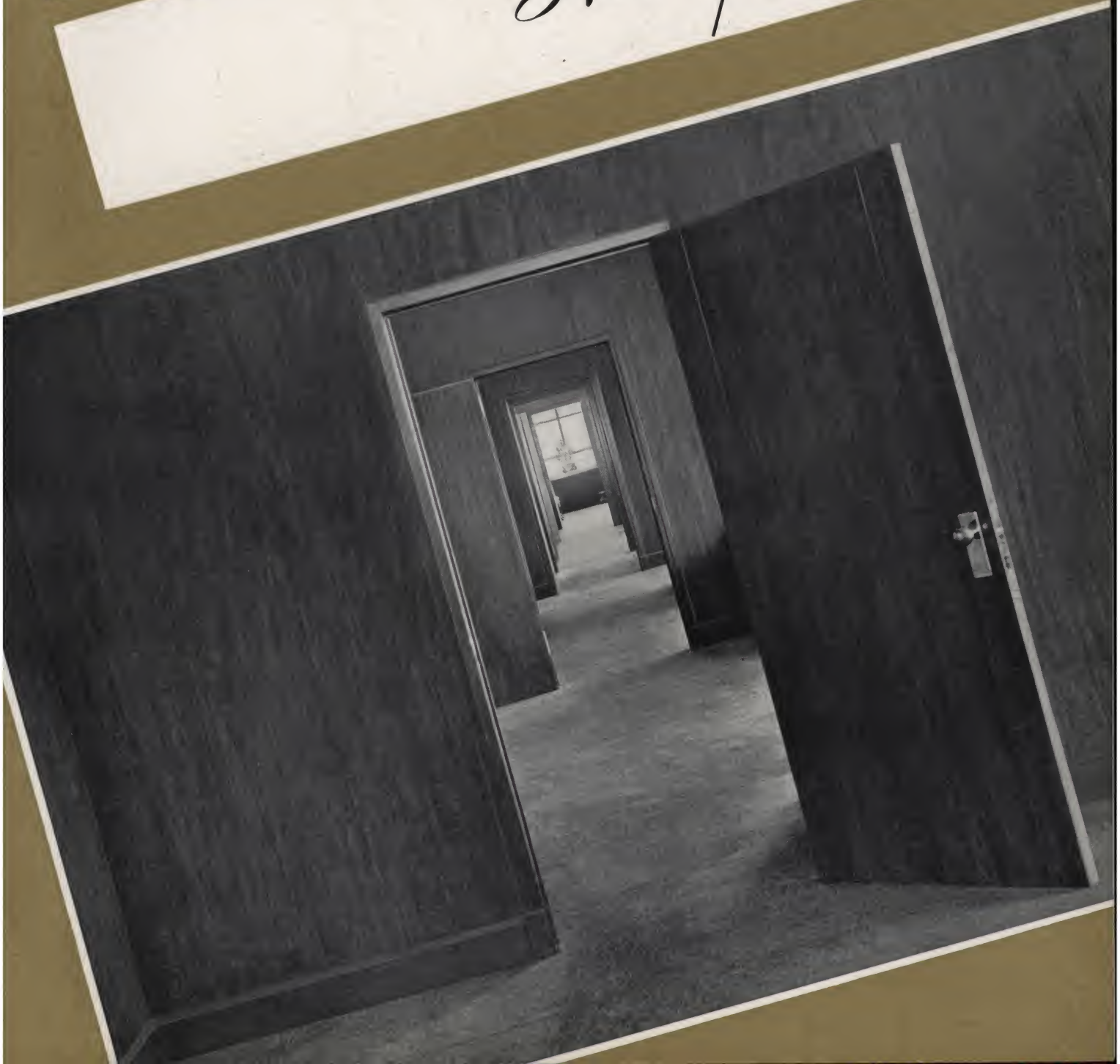
Electric Wires Do Not Interfere with Flexibility of Units

There are three holes through which the cables are carried along to location for desired switch or outlet, where they do not interfere with interchangeability of door and section units. Partitions therefore retain complete flexibility while electric cables are always accessible. The usual method is to draw the cable through section rails or base, thus destroying the interchangeability of units

Write in for full specifications and detailed drawings of Takapart Partitions.

MOVABLE STEEL PARTITIONS

by Hauserman





Masterwalls in solid color stippled. Doors, base and picture mould are photographically grained



Grained Masterwalls in the executive suite—Addressograph-Multigraph Corp., Cleveland



Type "W" installation showing the use of All-Steel to the 7 ft. line and clear glass above in the offices of the Texas Co., Chrysler Building, New York City

THE E. F. HAUSERMAN COMPANY

MANUFACTURERS OF MOVABLE STEEL "MASTERWALLS" AND PARTITIONS PLANNING, ENGINEERING AND ERECTION SERVICE

6994 Grant Avenue, Cleveland, Ohio

DIRECT FACTORY BRANCHES

NEW YORK, N. Y. PHILADELPHIA, PA. CHICAGO, ILL. KANSAS CITY, MO. BUFFALO, N. Y.
WASHINGTON, D. C. DETROIT, MICH. BOSTON, MASS. NEWARK, N. J.
ALBANY, N.Y. ST. LOUIS, MO. CINCINNATI, OHIO PITTSBURGH, PA.

PRODUCT: HAUSERMAN MOVABLE STEEL PARTITIONS AND "MASTERWALLS" for dividing and subdividing every type of monumental, office, institutional, adminstrative, apartment, research and industrial building—ceiling high, cornice high and junior partitions, office railings, window embrasures, radiator enclosures and hospital cubicles, complete with perfected accessories including doors, transoms, transom operators, ventilators, grilles, wickets, counters, hardware, etc.—all designed and manufactured by Hauserman, and finished in hundreds of exclusive Hauserman colors or photographic duplications of natural grains. For Doors and Bucks, see Manufacturers' Index.

THE COMPANY AND ITS EXPERIENCE: The E. F. HAUSERMAN COMPANY is the World's largest manufacturer of movable steel walls and partitions. For over fifteen years this organization has devoted itself exclusively to design study, development engineering; manufacturing and erecting methods of movable steel walls and partitions for every purpose. And by working in close co-operation with the Architectural and Engineering professions, Hauserman Engineers have found practical solutions for every kind of interior wall and partition problem. As a result today, more Hauserman Products are in use than all other makes combined. The Hauserman Company, offers co-operative assistance in office layout and will gladly prepare decorative suggestions. Ask for copy of "Office Planning Studies."

NATIONAL SERVICE: The E. F. HAUSERMAN COMPANY maintains its own factory trained Service Organizations in every section of the country. Its conveniently located Branch Offices are manned by experienced engineers whose services are immediately available. Each branch is equipped to thoroughly and quickly handle original installations, re-arrangements and additions—no job too small—no job too large. The company assumes undivided responsibility for each job—assuring complete satisfaction—all work is done by Hauserman Erection Crews.

PERMANENT APPEARANCE AND MOVABILITY: The only types of interior walls that can be truly termed "permanent"—which survive the inevitable floor layout changes—are MOVABLE STEEL WALLS and PARTITIONS. Money invested in built-up walls or partitions of masonry is a total loss with any re-arrangement. All parts of Hauserman Steel Walls and Partitions are salvageable. They outlive any building—permanent factory finishes practically eliminate maintenance. The more they are rearranged, taken down, added to and re-erected, the more dollars they earn.

HAUSERMAN MOVABLE STEEL PARTITIONS: The line includes types AA, BB, W, WW, K and HK. Types T, R and S are not illustrated in this catalogue. Details gladly furnished upon request.

It's the many exclusive patented features—built into Hauserman Steel MasterWalls and Partitions—that give them EXTRA VALUES and make them a finished product and a PERMANENT ASSET

1. Standard panels are stocked in seven heights and eleven widths, in multiples of three inches in height and five or six inches in width.
2. Doors, Bases and Plinths, float independently permitting adjustment to uneven floors or various thickness of floor coverings without cutting any portion of the partition or door.
3. Base is either floating itself or provided with an adjustable floor mould which permits adjustment to uneven floors or floor coverings at any time.
4. Cornice has an internal expanding pull-up splice insuring strength and a perfect joint.
5. Panels have telescopic glazing stops, which are integral parts of the units—(no screws or loose moulds).
6. Floor connections are concealed and provide for extending partitions in any one or all four directions from any pilaster without disturbing adjoining partitions, cornice, or top filler.
7. Panels and/or doors of various sizes can be interchanged or rearranged to relocate doors or intersecting partitions without disturbing other panel units, cornice or top filler.
8. Post caps, plinths, base and corner moulds snap on securely concealing all methods of assembly.
9. Picture hooks for hanging heavy maps, charts and pictures are inserted at any time into inconspicuous slots in the soffit of the transom rail or top rail.
10. Partition members carry and conceal electric and telephone wires and cables. Bases are easily opened for "lay-in" wiring, and "lay-in" wires are as easily removed as installed.
11. The tie rod assembly of partition units makes it practical to "cut down" a unit in height or width at any time as may be required to meet unexpected conditions, and thereby saves the time and expense required for shop fabrication of special units.
12. Panel Plates are "patent leveled" furniture steel. All other members are full cold rolled, full finished strip steel.
13. Units are either all steel, steel and glass or steel and wire mesh, and are interchangeable at any time.
14. Either single or double doors are furnished, any swing. Doors may be of a single or two panel type, either all steel, glass, or steel and glass. They are all mortised for standard hardware, and all Hauserman standard lock sets are interchangeable at any time.
15. Grilles, Wickets, Ventilators, Transoms or Blackboards may be installed in any partition unit. Transoms and ventilators are controlled mechanically with the concealed self locking operator. (Hauserman perfected and built).

TYPE "A A" MOVABLE STEEL MASTERWALLS

by Hauserman

SOUND PROOFED • FLUSH TYPE

THE new Hauserman "MasterWall" is a distinct innovation! It is a 4″ SOUND PROOFED and MOVABLE wall of STEEL that has every appearance of PERMANENCE. It is absolutely flush. The finest single line marks the sectional divisions. The doors, frames and trim are harmoniously designed, either flush or with a choice of mouldings.

"MasterWalls" are furnished in "all steel" or "steel and glass." The "steel and glass" "MasterWall" can be either double or single glazed. Double glazing provides light and visability without sacrificing soundproofness, and the glass may be cleaned internally.

This new Hauserman Product gives the architect a new and valuable material which has unlimited possibilities for the dividing of space in any type of building where masonry and plaster have been used heretofore—where major divisions are required such as party walls or walls between tenants, corridor walls, executive offices, etc. Each side is factory finished and erected independently.

Today, the **entire interior** of any building can be divided and sub-divided with a permanent type of wall which is easily and quickly removed and re-erected **with every part SALVAGEABLE!** Newly arranged walls go up over night or over the week end. The "MasterWall" answers every requirement of a non-load bearing wall with none of the disadvantages and the expense involved in tearing down masonry, carting away debris, rebuilding and refinishing. There is no waiting for mortar, plaster and paint to dry—a finished job in one to three days instead of two to four weeks. What this means in dollars is illustrated in the chart on opposite page.

"MasterWalls" are made up of separate half panels on each side. The half panels are factory assembled and insulated and erected with an air space between to form a sound barrier **equal to a three-inch tile wall** plastered on each side—or a total thickness of 4½ inches.

"MasterWalls" are finished in hundreds of exclusive colors, either in a smooth or rough texture or in a grained finish by the photographic process which duplicates the most beautiful walnuts and mahoganies. These fine enduring finishes—factory applied—do not require periodic refinishing. Maintenance costs are eliminated. Separate finishes or wall treatments are used on opposite sides of the partition without penalty.

"MasterWalls" form this corridor in the offices of Albert Kahn, Inc., Detroit



DESIGN AND CONSTRUCTION

The panels are of absolutely flush construction having a continuous sheet of steel from base to picture mould and insulated to prevent sound transmission. Concealed posts placed at each joint and telescoping from floor to ceiling, support the wall. Each half panel is secured to the posts by a series of hooks that engage in slots. The margins of one panel meet the other to form an absolutely flush single line joint. Ornamental inserts may be used between joints, if desired.

Each post consists of two half posts securely held together by means of hook clips and is equipped with a concealed telescopic member which is extended and secured to the ceiling. Air space is provided from floor to ceiling, the entire length of the wall. The thickness of the wall can be expanded—using the same materials—to accommodate telephone and electric conduits, water pipes, ducts, lockers, ventilators, etc. Only one side of the "MasterWall" is required for furring to enclose columns or for paneled rooms, thus reducing costs and saving space.

The "MasterWall" is provided with sound deadening strips at the floors and walls, with tightly sealed joints to prevent sound transmission. The base is floating and independently adjustable on each side of the "MasterWall" to meet floor irregularities and different thickness of floor coverings. A picture mould of either chamfered or moulded design is provided when specified, but is omitted where flush walls are desired.

DOOR AND FRAMES

The Hauserman patented door frames are a floating type, easily adjustable, up or down to meet the irregularities of floors or different thicknesses of floor coverings. These frames are telescopic construction, which permits their use in walls of varying thickness. Transoms are horizontally pivoted and provided with concealed operators. The door units are interchangeable with panel units of the same size at any time. Panels and door units can be removed and rearranged without disturbing the adjoining panel units or disturbing top fillers.

Security is assured because each half panel is separately locked on its own side of the wall.

WIRING

The exclusively Hauserman base on both sides of the "MasterWall" is provided with continuous low and high tension wiring race-ways. Door frames have removable sides to provide for lay-in wiring around door frame, eliminating use of jumpers under doors. Panels are constructed with a wiring race-way at the top edge for concealing wires without the use of picture moulds. Each post provides a race-way for wiring from top of panel to base from either side of the wall. The air space between panels makes it easily possible to mount switches, outlets, fans, or wall lighting fixtures at any location on the panel, base and/or door frame.

Over a quarter million square feet of "MasterWalls" are now in use. (See details on following pages.)

MASONRY WALLS . . . COMPARED WITH . . . MASTERWALLS

Time in Days to Erect

1st: Layout and Hoist Material.

2nd: Erect Walls and Electric Work.

3rd: Brown Coat.

4th: White Coat.

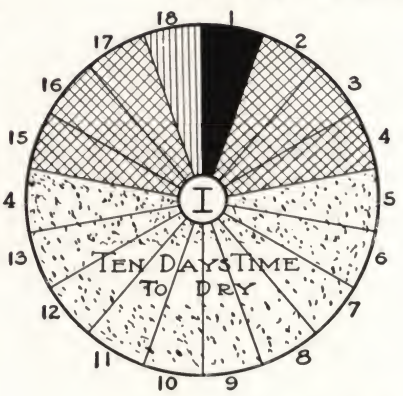
5th to 14th: —14 days' time to dry. Occasionally three weeks required.

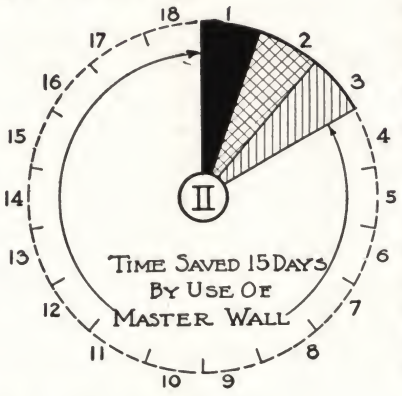
15th: Sparkle and prime.

16th: First Coat.

17th: Second Coat.

18th: Dry and clean up.





1st: Layout and Hoist Material.

2nd: Erect and Paint tops.

3rd: Clean up.

4th to 18th inclusive, Time saved 15 days by use of MasterWalls.

At least 15 days quicker occupancy.

Savings in Cleaning and maintenance.

Elimination of dirt and annoyance!

Cost of Original Installation

(Black areas indicate permanent investment)

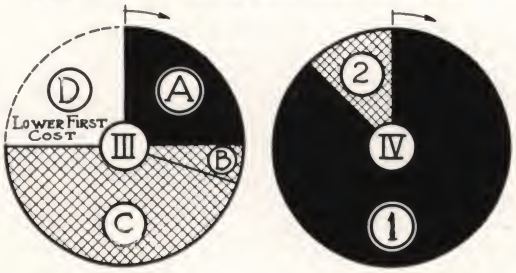
A. Cost of door, buck, glass, glazing and hardware.

B. Cost of erecting buck and door.

C. Cost of Masonry Wall, erected complete —painted both sides.

D. Cost of original Masonry Wall 25% lower than MasterWall.

60% of original cost of Masonry Wall is unsalvageable material which is knocked down and removed as rubbish when changed.



1. Cost of original 4″ thick Soundproof flush MasterWall decorated.
2. Cost of erecting original MasterWall.

Cost of Original MasterWall is more than Masonry Wall.

80% of Cost of Original MasterWall However is Permanent Investment, Re-usable with each Future Change.

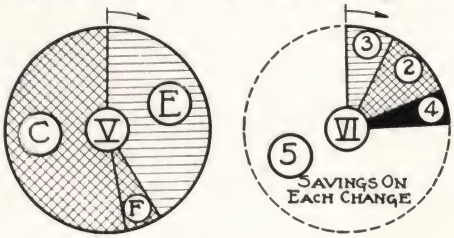
Cost of Each Change

E. Cost of knocking down Masonry Wall and removing rubbish — repairing plaster.

F. Cost of erecting door and buck.

C. Cost of new Masonry Wall erected complete, painted both sides.

Each change costs more than the original wall even after allowing for salvage from original wall. Cost of breaking down and removing rubbish is greater than the value of salvage.



3. Cost of taking down MasterWall.
2. Cost of re-erecting MasterWall.
4. Cost of touch-up and additional top filler, if required.
5. Savings on each change.

The saving on each change of MasterWall is more than twice its added original cost (item "D").

Cost of changing MasterWall is less than cost of breaking down and removing rubbish of Masonry Wall (item "E").

Ten Year Comparative Costs

Without Change and With One and With Two Changes

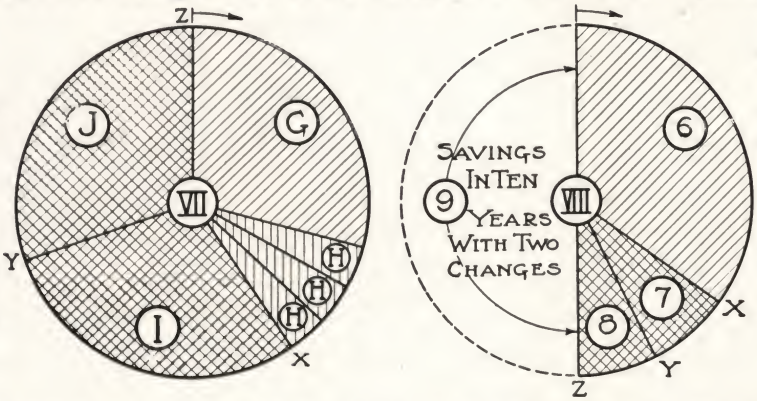
G. First Cost (See Circle III).

H. One repaint — Three repaints required in Ten Years.

I. First Change (See Circle V).

J. Second Change (See Circle V).

X. Masonry Walls cost 5% more than MasterWalls in ten years even if they are not changed due to cost of repainting.



6. First Cost (See Circle IV).
7. First Change (See Circle VI).
8. Second Change (See Circle VI).
9. Savings in Ten Years with Two Changes.

X. Indicates ten year cost without change.

Y. Indicates ten year cost with one change.

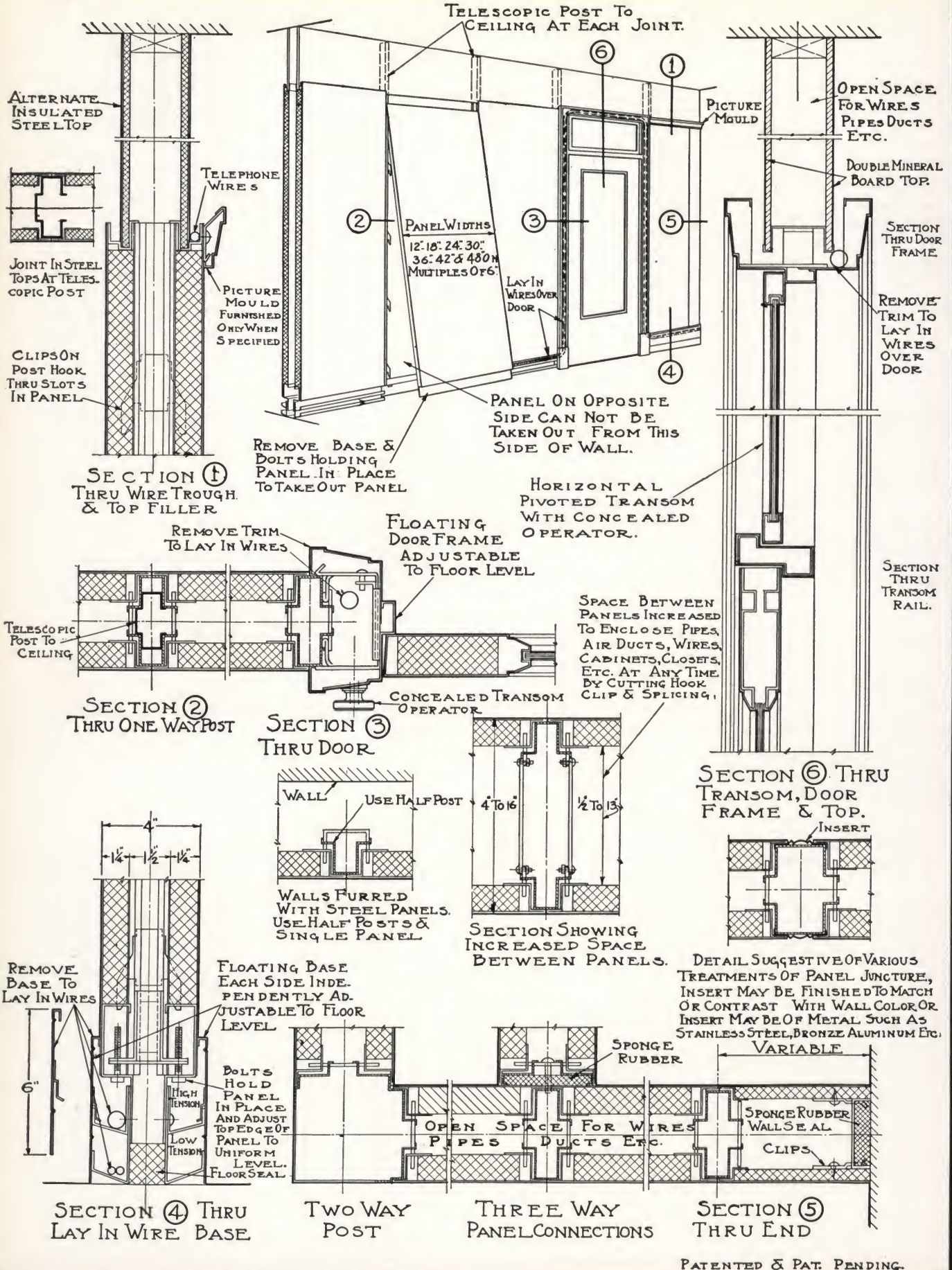
Z. Indicates ten year cost with two changes.

WITH HAUSERMAN MASTERWALLS AND PARTITIONS

- *Quicker occupancy . . . Save at least fifteen days' use of space.*
- *Costs one-half as much as masonry with two changes in ten years.*
- *Costs two-thirds as much as masonry with one change in ten years.*
- *Costs no more than masonry if not changed in ten years.*
- *Nuisance costs eliminated.*

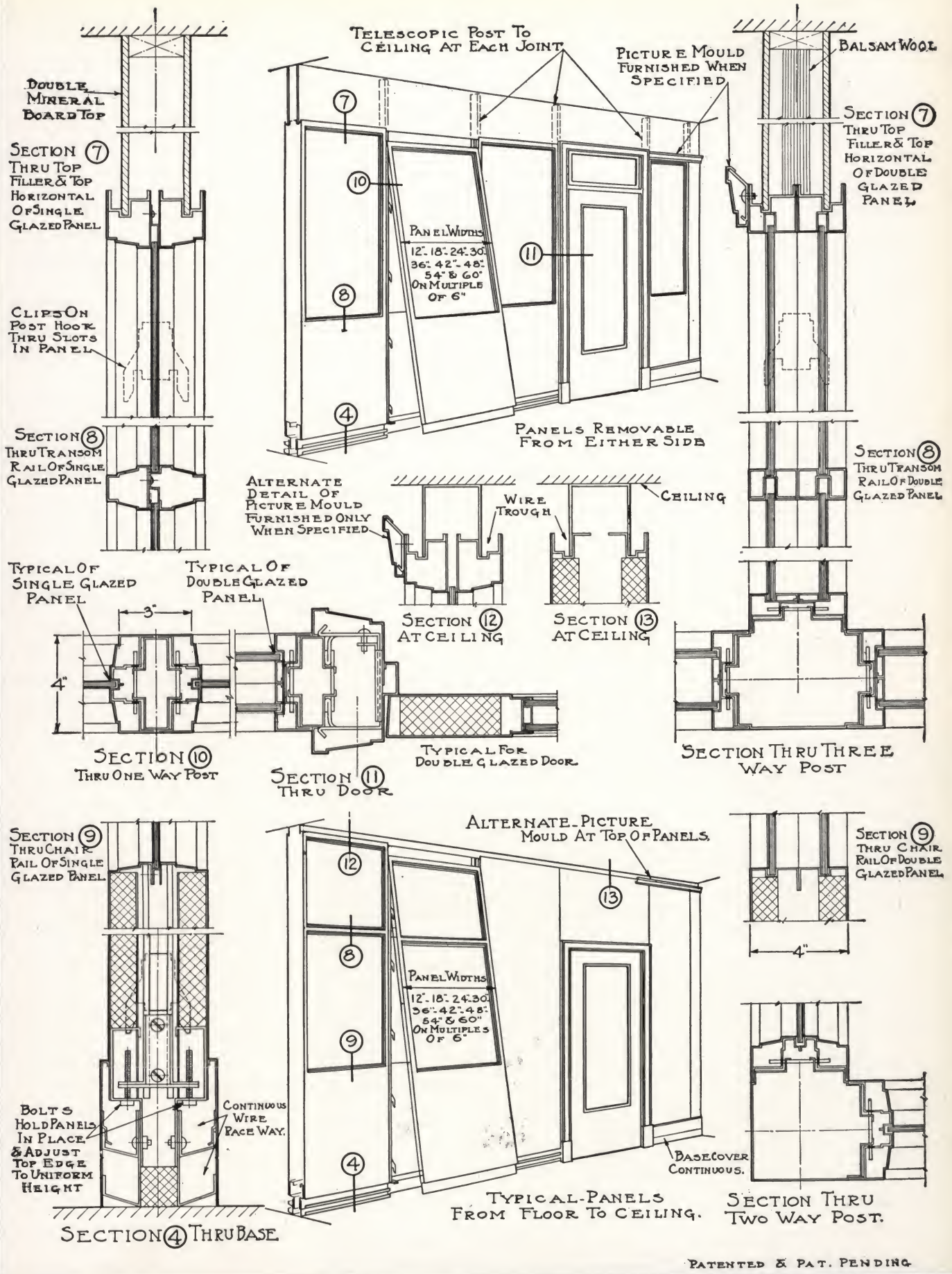
All above data based on actual experience of erecting and changing both masonry and steel walls in The Chrysler Building, New York City.

C 492



Patented & Pat. Pending.

4 INCH THICK SOUND PROOFED FLUSH MASTERWALLS



PATENTED & PAT. PENDING

4 INCH THICK SOUND PROOFED GLAZED MASTERWALLS

TYPE "BB" MOVABLE STEEL PARTITIONS

CHAMFERED DESIGN
SOUND PROOFED • SEMI-FLUSH

by Hauserman

TYPE "BB" is a semi-flush, chamfered design with sound proofed construction. When furnished in "all-steel" the chair rail transom and top rails are omitted. Its semi-flush surfaces are further enhanced by chamfered mouldings which are only slightly projected from the panel plane—totally different from the conventional types of moulding.

"BB" is a new, thick-paneled partition designed to provide greater soundproofness. Its steel panels, 1½" thick are packed with a sound deadening filler. Even when light and visibility are desired these sound proofed qualities can be retained because the "BB" design permits of double glazing.

The **steel and glass** "BB" partition, single or double glazed is provided with chair and transom rails of chamfered design, which like the pilasters, base and cornice are designed with minimum reveals. Glass is replaced by solid steel packed panels ⅜" thick at any time.

This Hauserman Partition in the all-steel type is particularly adaptable for lobbies, private offices and directors' rooms where its flush surfaced panels without chair or transom rails lend dignity to the room and where its sound proofed qualities provide the desired privacy.

An attractive office paneled in Type "BB" with Radiator Enclosures and Window Embrasures



Type "BB" is furnished in hundreds of different color treatments and in photographic grained finishes, which duplicate the finest of mahoganies and walnuts.

DESIGN AND CONSTRUCTION

PANELS

Are 1½" thick, insulated with a sound deadening filler. The standard "BB" panels are made in multiples of 6". The "all-steel" panels are furnished in 6" to 48" widths and the "steel and glass" panels in 12" to 60" widths. The standard panel heights, including a 2½" cornice are 7' 2½", 8' 2½", 8' 5½", 8' 8½", 9' 2½", 10' 2½".

The mouldings on chair rail, transom rail and top rail are of chamfered design. On the "all steel" "BB" partitions, the chair rail and transom rail are omitted, the panels being constructed of a continuous sheet of steel from base to cornice. The tie-rod assembly of all panels permits "cutting down" in the field—a patented Hauserman feature, which permits any condition of layout to be readily met.

End verticals on any two adjacent panels form the post and are held in spaced alignment by wedge clips. Post is constructed for universal assembly in one-way, two-way, three-way or four-way conditions. The opening between panels is covered by a flat post cap of chamfered design snapped over clips on all-steel and double glazed partitions. The post is packed with balsom wool for additional soundproofness when specified—Post caps are removable for installation of wires, switches, outlets, transom operators, etc. The plinths are 6" high, snap on and are adjustable to any irregularities at the floor line.

DOOR FRAMES AND TRANSOMS

The mouldings on the door are of a chamfered design and are integral with the door, eliminating all loose glazing moulds. The door is glazed by sliding glass through a slot in the top.

The floating door frame of exclusive Hauserman design, permits adjustment up or down to meet floor irregularities and different thicknesses of floor coverings. Transoms are horizontally pivoted and operated by a self-locking concealed operator.

BASE

Is floating and independently adjustable on both sides of the partition to meet floor irregularities and different thicknesses of floor coverings. It is finished in black or any color to harmonize with the partition.

CORNICE

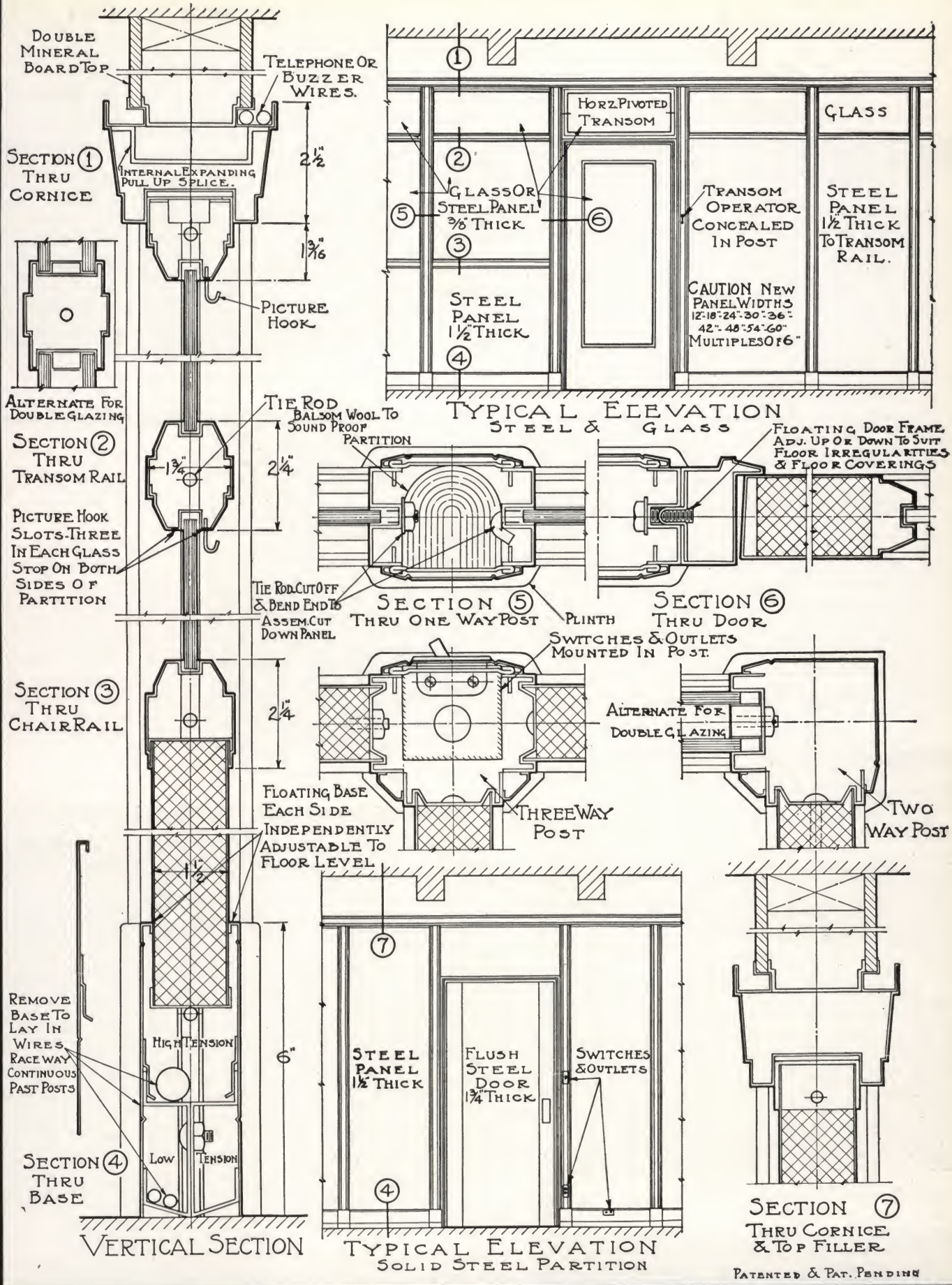
Is of chamfered design in harmony with mouldings on the partition. It is of tubular construction with internal expanding pull-up splice, patented by Hauserman, and insuring perfect joints and great strength.

WIRING

Provision is made for concealed wiring through the base, posts and cornice without cutting or drilling. Each side of the base is independently removable for lay-in wiring and each side has two race-ways for low and high tension wires. Wires run continuously past the posts. Proper cutouts are provided for installation of switches and electrical outlets in the base, chair rails and post caps.

MOVABILITY

This partition is truly flexible and is easily and economically moved. Any single part or parts may be taken out, replaced or interchanged with a minimum effort without disturbing adjacent parts.



"BB" SEMI FLUSH CHAMFERED DESIGN • PANEL 1½ IN. THICK



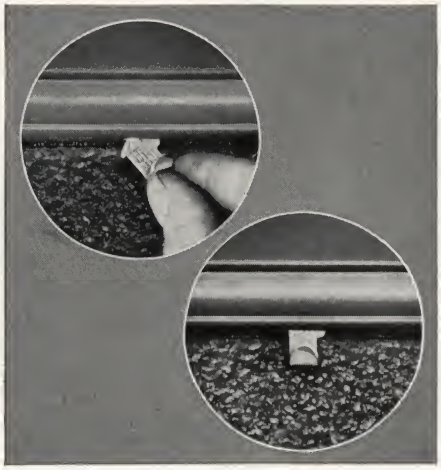
Convenient display cases installed in the panels



Window embrasures enhan the appearance of any offi



Storage cabinets and lavatories are quickly erected from standard partition units



Slots for picture hooks are provided in each panel

ACCE

The group of Hauserm Accessories illustrated on th pages provide many necessit and conveniences which c be included to advanta wherever movable steel wa and partitions are used. Th are designed to harmonize a structurally conform to Ha serman "Master Walls" a any type of Hauserman pa tions.



Counters match the partitions perfectly, in design and finish



Counter-high bank screens with bronze grille for the cashier



Wash room accessories are installed on the panels—electric wires, water pipes and drains are concealed in the partition



Vickets can be installed wherever or whenever needed



Convenient Shelving installed on steel panels

ORIES

ese accessories, each one a oughly finished product of erman design and manu- re, can be included in the nal installation or can be ly and easily added when- desired at any later time. ver Night" or "Over the k End" and more conveni- more efficient and more ctive offices are ready usiness.



Flush-type counters and railings, with black hand rail and base



Bath room in a private office suite enclosed with the sound-proofed Masterwall



A combination grille and wicket—either grille or wicket can be installed separately



All mechanical parts of the Hauserman patented transom operator are concealed within the posts and are easily operated with a small bronze crank

JUNIOR PARTITIONS AND RAILINGS

flush type — moulded type

IN lobbies, reception rooms, general offices, large departments and around telephone switch-boards, where the isolation obtained by ceiling high partitions is not required, Hauserman Junior Partitions and Railings perform a most practical service. They control traffic, promote systematic office operation while they provide semi-privacy with maximum ventilation. They are securely anchored to the floor with reinforcing posts through the verticals. In design, color and finish they match the different types of Hauserman "MasterWalls" and Partitions.

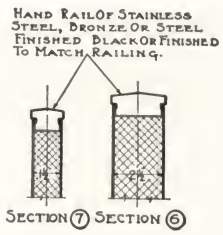


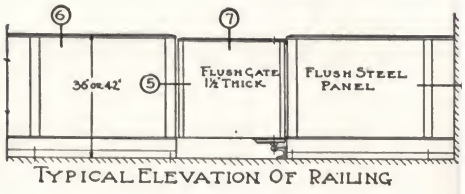
Illustration above shows the flush type Railing. The moulded type Junior Partition is shown below.

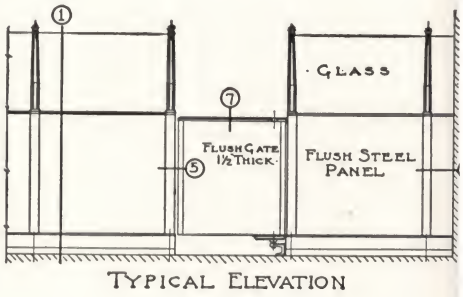


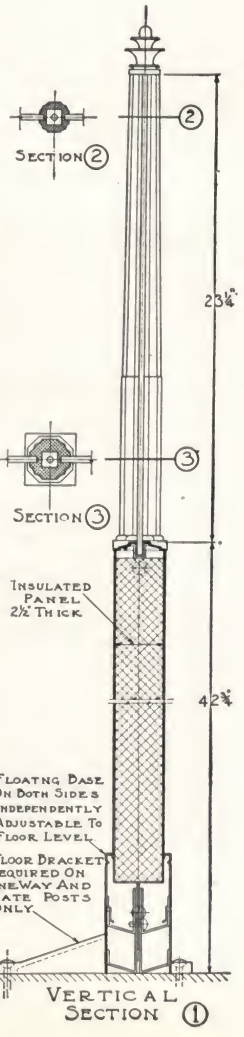
Hauserman Junior Partitions: have well designed tapered posts with finials of black, bronze or chromium and are furnished with a closed base and double acting gates. They may be glazed with clear or obscure glass either 18″ or 24″ in height, giving an over all height of 5′ or 5′ 6″.

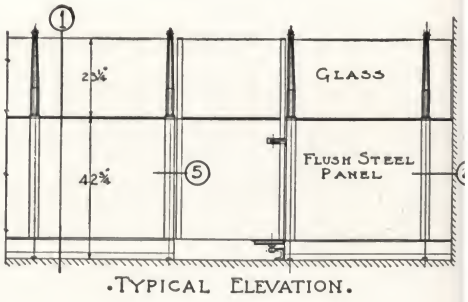
Hauserman Railings: are either 36″ or 42″ in height, furnished with a closed base and double acting gate, with sturdy reinforcements at each vertical. Railings are finished to match partitions. Hand rails are furnished in black, bronze or stainless steel.

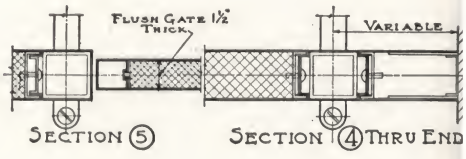


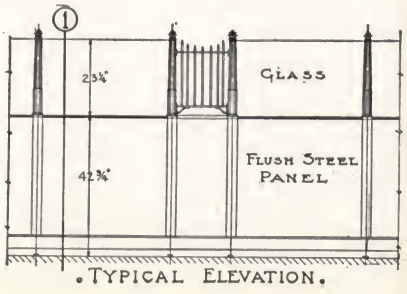












MOVABLE STEEL PARTITIONS

TYPES "W & WW"

MOULDED DESIGN

by Hauserman

IN design, construction and appearance both of these types meet a wide range of partitioning needs—in general offices, private offices, office building subdivisions, tenant office buildings, telephone and information booths, lobbies and waiting rooms, washrooms, etc. While they are similar in many respects they have the following fundamental differences—**Type "W" is of moulded design with all mouldings uniform. It has 3/8" packed panels. Type "WW" is of semi-flush moulded design and has 1½" packed panels and provides for either single or double glazing.**

Both types have patented tie rod assembly which permits the "cutting down" of units in height or width in the **field** to meet unexpected conditions. Time and expense required for shop fabrication of special units is saved.

The Hauserman floating base is independently adjustable on both sides of the partition to meet floor irregularities and different thicknesses of floor coverings. Each side of the base is removable for lay-in wiring and each side has two race-ways for low and high tension wires. The wires are run continuously past the posts without fishing. Base is finished in black or any color to harmonize with the partition.

The door frame has the exclusive floating feature which permits adjustment up or down to meet floor irregularities and different thicknesses of floor coverings. Transoms are horizontally pivoted and operated by a self-locking concealed operator with an attractive bronze handle. The cornice 2¾" high is of the Hauserman standard tubular construction with internal expanding pull-up splice insuring perfect joints and great strength.

The plinth has rounded corners and snaps on tightly to the pilaster cap. It is vertically adjustable to floor or floor covering levels and is finished to match the base. The panels are constructed of two sheets of patent leveled steel cemented to a sound deadening filler. (See details of both types on two pages following.)

Telescopic glazing, another exclusive feature, is used on both types. There are no exposed screws or loose mouldings. Picture hooks are provided for hanging pictures, maps or charts at any point.

End fillers are provided with sponge rubber wall seal held in compression against the wall. The filler sheets are insulated and base extends to the wall.

Type "WW" is furnished in "all-steel" or "steel and glass." Having 1½" packed steel panels, it can be single or double glazed. When furnished in "all-steel", both the chair rail and transom rail are omitted to enhance the semi-flush appearance. When furnished "all-steel to the 7' line," with glass above, it has transom rail only. When furnished in "steel and glass," it has both chair and transom rails.

Type "W" is furnished in "all-steel" or "steel and glass" and both have chair rails and transom rails.

Both of these Hauserman types are used extensively in tenant office buildings for the sub-dividing of individual tenant quarters. They provide ample sound deadening for such installations.

MOVABILITY

These types incorporate every element of movability and flexibility. The patented Universal posts permit intersecting partitions to be added or removed in any or all four directions. Glass and steel panels are easily interchanged and the same material is readily used over and over in any layout.

TYPES T, R AND S (Not Illustrated)

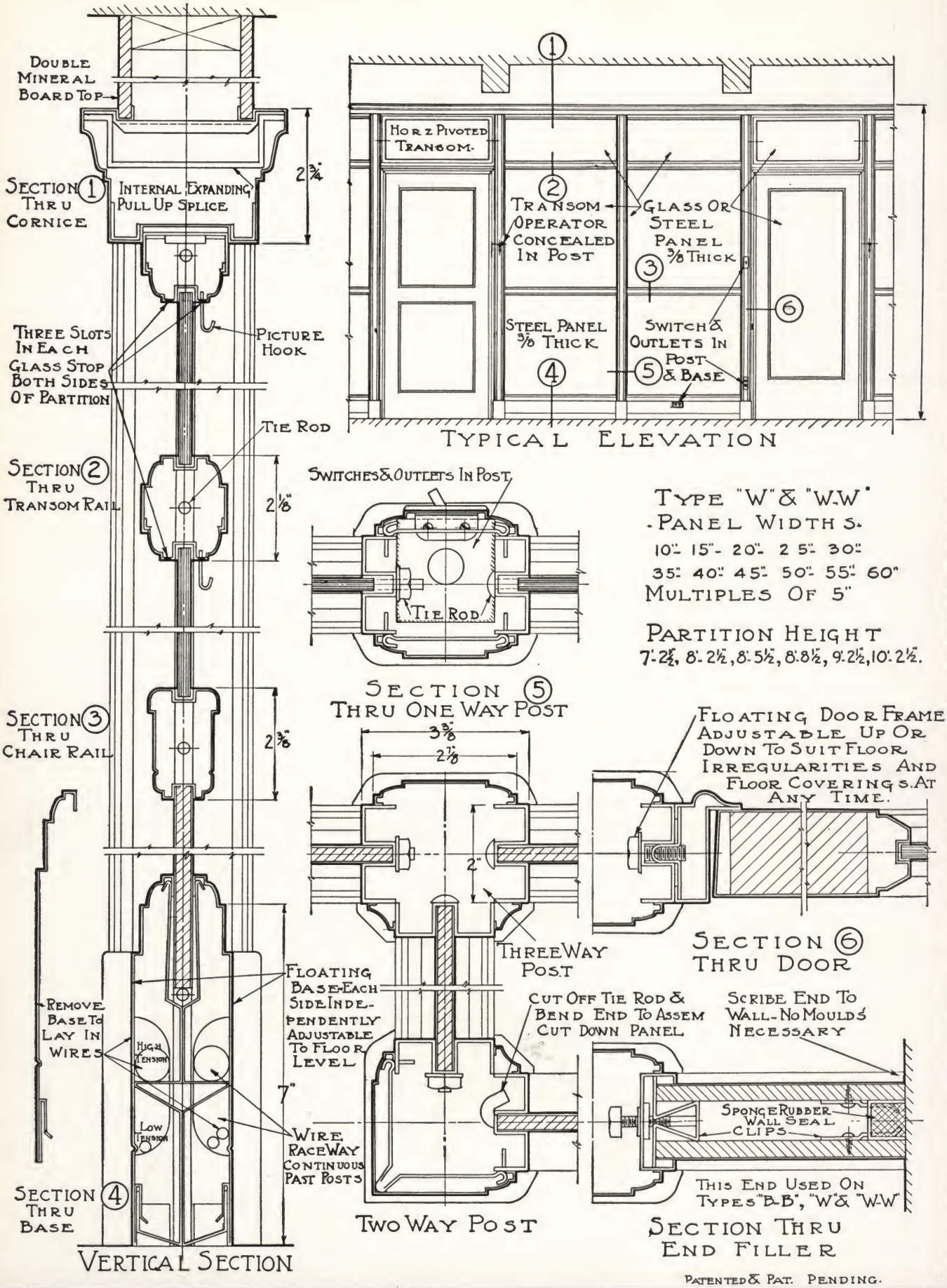
Have all the features of type "W" and differ only in the contour of the members. They have one piece floating mop strip.

These types are carried in stock for immediate additions to present installations.

One of the Travelers Insurance Company's offices in the Empire State Building, New York City. Type W "glass and steel partition with moulded railing is shown

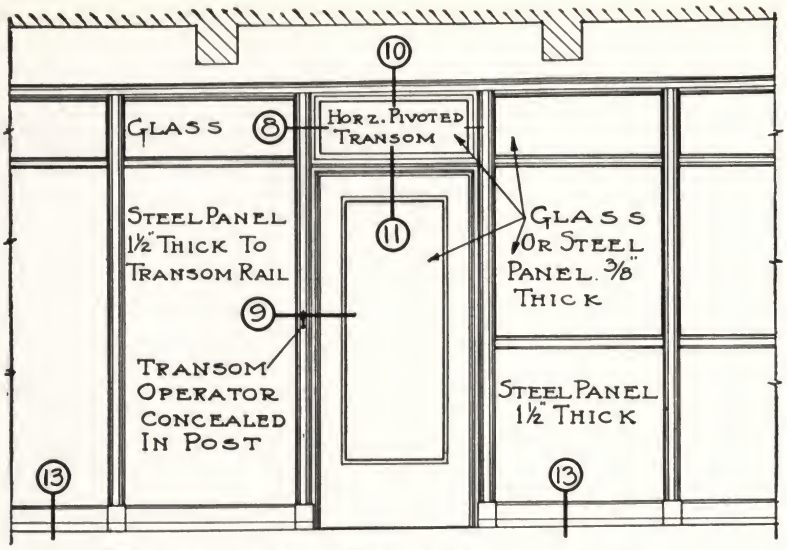


C 500

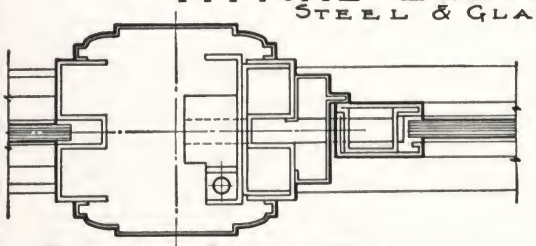


PATENTED & PAT. PENDING.

"W" MOULDED DESIGN • PANEL ⅜ IN. THICK



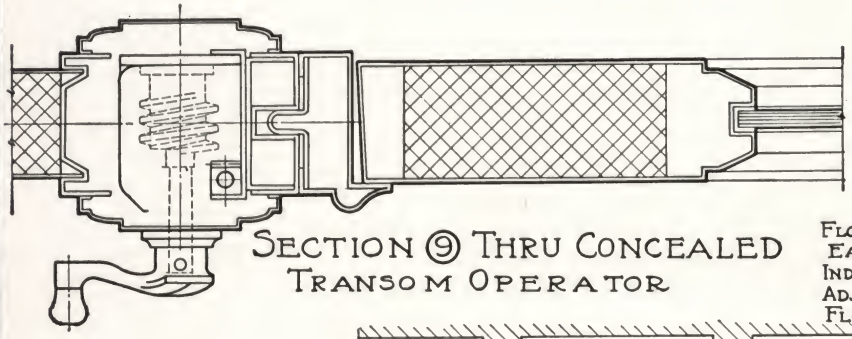
TYPICAL ELEVATION
STEEL & GLASS



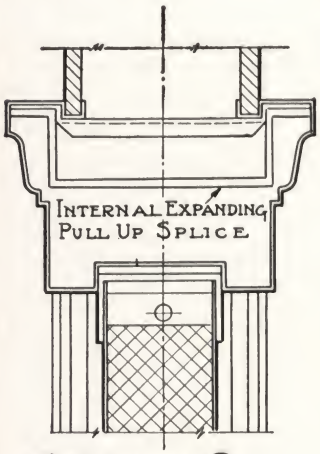
DOUBLE GLAZED SAME AS TYPE BB.

HORIZONTAL PIVOTED TRANSOM WITH CONCEALED OPERATOR SAME FOR TYPES "W," "WW" & "BB."

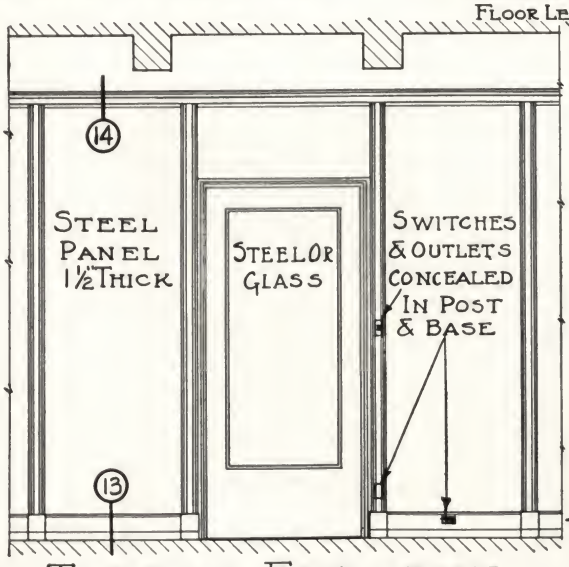
SECTION ⑧ THRU TRANSOM



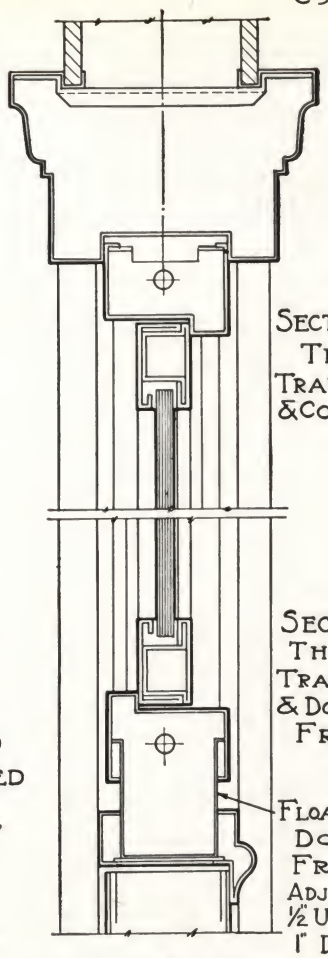
SECTION ⑨ THRU CONCEALED TRANSOM OPERATOR



SECTION ⑭ THRU CORNICE & STEEL PANEL.



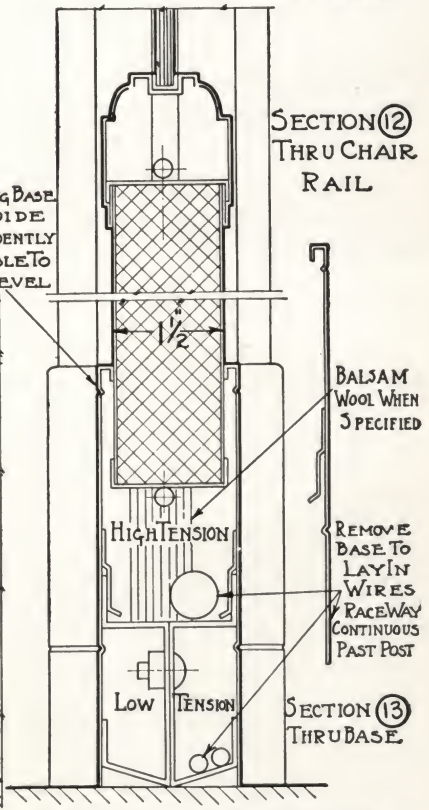
TYPICAL ELEVATION
SOLID STEEL



SECTION ⑩ THRU TRANSOM & CORNICE

SECTION ⑪ THRU TRANSOM & DOOR FRAME.

FLOATING DOOR FRAME. ADJUSTABLE ½" UP AND 1" DOWN.



SECTION ⑫ THRU CHAIR RAIL

SECTION ⑬ THRU BASE.

VERTICAL SECTION

PATENTED & PAT. PENDING

"WW" SEMI FLUSH MOULDED DESIGN • PANEL 1½ IN. THICK

C 502

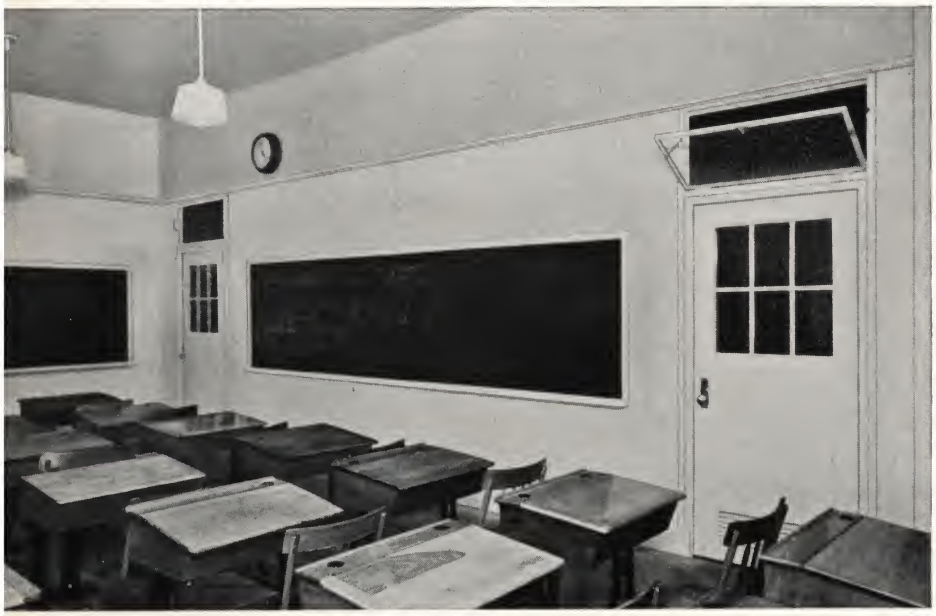
TYPE "A A" MASTERWALLS FOR SCHOOLS

by Hauserman

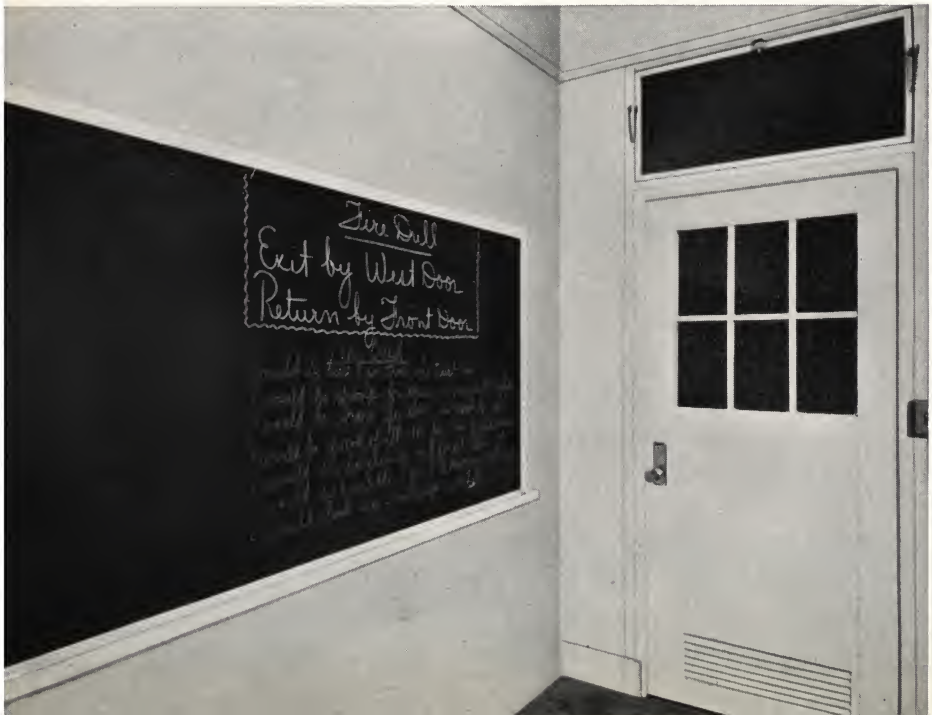
SOUND PROOFED • FLUSH TYPE

CONTINUOUSLY changing conditions in school administration and housing have created a demand for greater interior flexibility in both new school construction and the remodeling of old buildings. Yearly fluctuations in student enrollment, changes in the size of classes, changes in the use of buildings from high school to junior high or grade school, are a few of the situations which frequently make the remodeling and re-arrangement of rooms vitally necessary.

Heretofore these alterations, often desirable during the school year, have been held up because of high costs and limited budgets or held in abeyance until the vacation period because of the time required and the muss, dirt and annoyance from the tearing out of tile and plaster walls or other built-up types. Such walls are a total loss when re-arranged. They not only involve full re-building costs but also the cost of tearing out and carting away the debris.



"MasterWalls" in the East Boston High School. Illustrations show walls between class rooms and the class room side of corridor walls



A Practical Solution

Hauserman Movable Steel "MasterWalls" completely and economically solve this school problem. They provide the school with **fire-resiting, sound proofed** walls of steel. Yet walls that are **MOVABLE.** Their original cost is unbelievably low and with every re-arrangement—which can be easily made over night or during any week-end—they reclaim many dollars. All muss and dirt is eliminated. "MasterWalls" are completely SALVAGEABLE. They are made in various section widths and elevations to meet all school building requirements in **both new and old buildings**—walls for dividing class rooms, administration offices, libraries, cafeterias, corridors, etc. (See "AA" drawings for details).

Remodeling Made Easy

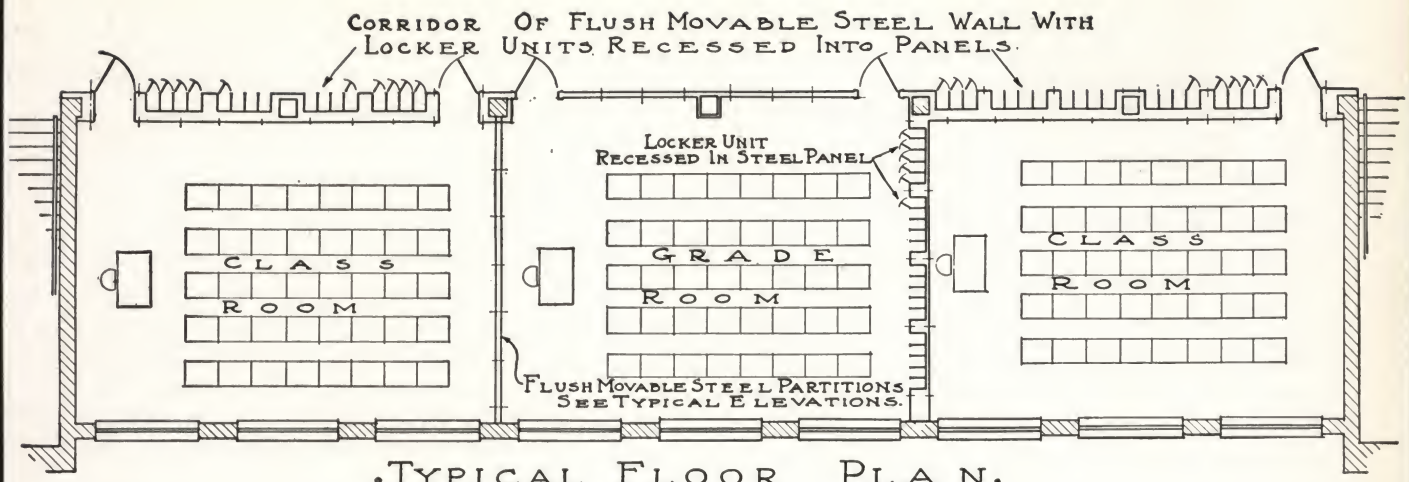
It is often necessary to remodel old buildings in order to provide extra class rooms of subdividing gymnasiums, libraries, basements or other floor space. In such situations, "MasterWalls" have quickly and economically brought about the desired results. And this work has been accomplished with every appearance of permanence.

Provide Every Accessory

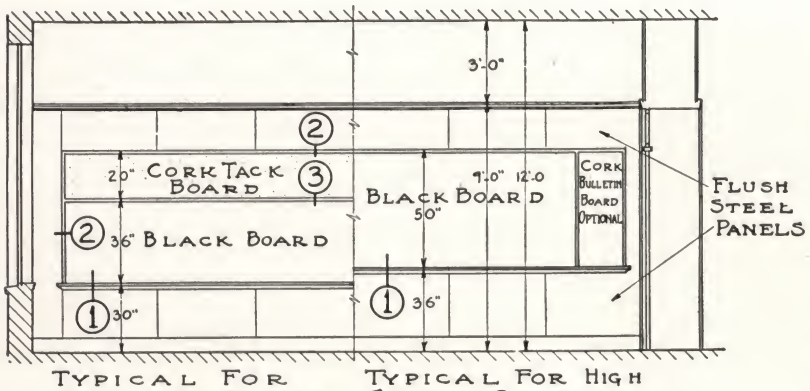
Provision is made for the installation of slate or composition black boards, with chalk rails, tack boards and bulletin boards—all at any height or any location. This 4″ sound proofed steel wall can be increased in thickness to accommodate lockers, heating equipment, ventilating ducts, storage spaces, etc.

Long Life Means Economy

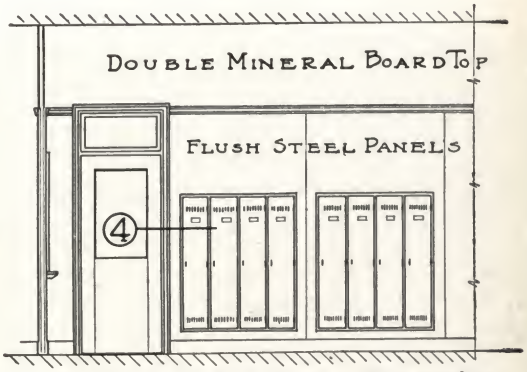
"MasterWalls" are fire-resisting, sound proofed and sanitary—they outlive the building. They can be finished in smooth satin, wear-resisting lacquer in colors most restful to the eyes or photographically grained to match selected walnuts or mahoganies. **There is no glare, no objectionable reflections.** Germicidal finishes are available.



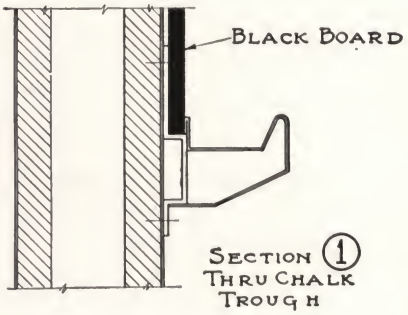
TYPICAL FLOOR PLAN.

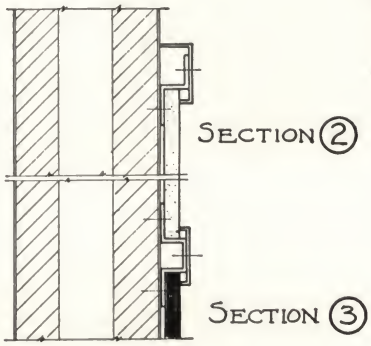


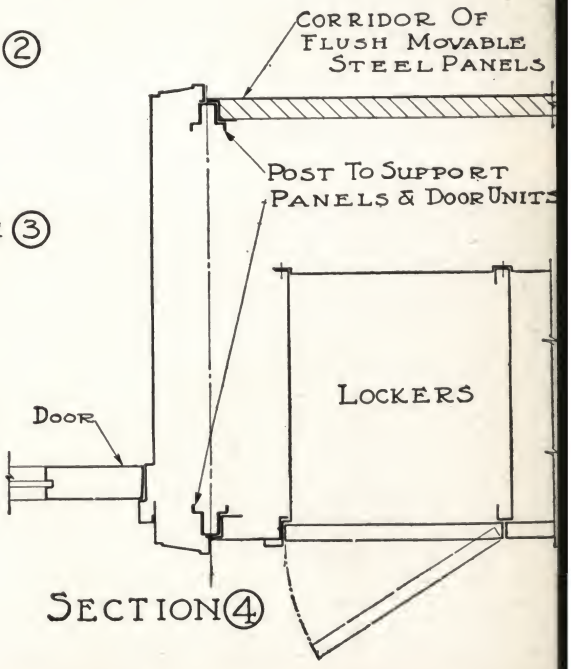
TYPICAL FOR GRADE ROOMS — TYPICAL FOR HIGH SCHOOL CLASSES

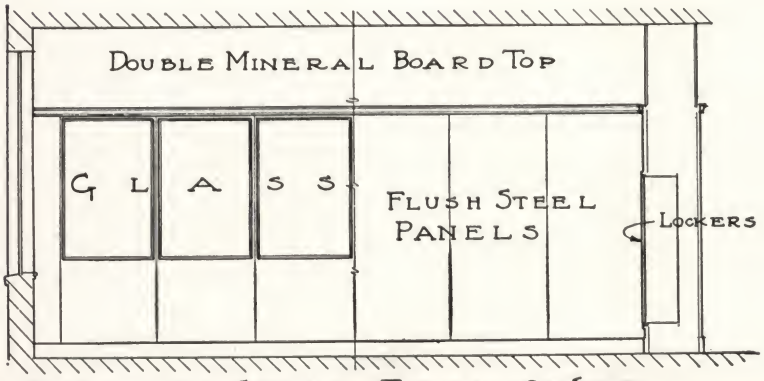


TYPICAL OF CORRIDOR PARTITION WITH LOCKERS RECESSED IN MOVABLE STEEL PANELS.









TYPICAL OF STEEL & GLASS PARTITIONS. — TYPICAL OF SOLID STEEL PARTITIONS.



First Aid room in the Chrysler Motor Company, Detroit, Type "HK" partitions, both ceiling and cornice heights

Partitions fit perfectly into this saw tooth roof in the Curtiss Aeroplane Company's Plant Buffalo, N. Y.

Steel and wire mesh panels form most practical tool room—note pi carried through top condition

THESE SERVICE RECORDS GIVE YOU FACTS FROM WHICH TO JUDGE HAUSERMAN PERFORMANCE

● For 78 clients alone—all Nationally-known concerns—Hauserman has designed, built and erected 5,796,280 sq. ft. of movable steel partitions.

● In the World's two tallest buildings Hauserman Partitions have been used exclusively. In the Empire State Building over 300 separate tenant installations and rearrangements have been completed to date—in the Chrysler Building, 312, including one which embraced 17 floors.

● The Hauserman Company has partitioned more Telephone Buildings than all other Partition Manufacturers combined.

● The New York Telephone Company alone has placed 557 separate contracts with the Hauserman Company. Over 4½ miles of Hauserman Partitions have been installed in the Barclay-Veasey (New York Telephone Co.) Building, New York City.

● Hauserman has completed 667 separate contracts for the General Electric Company, over a period of eleven years.

● 118 contracts for the General Motors Corporation total over 1,000,000 sq. ft. of Hauserman Partitions. Hauserman has handled Studebaker installations and rearrangements of steel partitions for 14 years. Fully 80% of all movable steel partitions used by the Automobile Industry are Hauserman Partitions. In the past 4 years we have made over 100 separate installations for the Chrysler Motor Car Co., Detroit, Mich.

● In a single week, The Hauserman Company was awarded steel partition contracts for five of New York City's newest and largest office buildings—The Empire State Building, The 500 Fifth Avenue Building, The Continental Building, The 21 West Street Building and the City Bank Farmers Trust (National City) Building.

● Hauserman has manufactured and installed over $15,000,000 worth of movable steel partitions in the past 10 years. Hauserman development has changed steel partitions from an **expensive luxury** to an **economic necessity.**

THE E. F. HAUSERMAN COMPANY

6900 Grant Avenue, Cleveland, Ohio

DIRECT FACTORY BRANCHES IN THESE PRINCIPAL CITIES

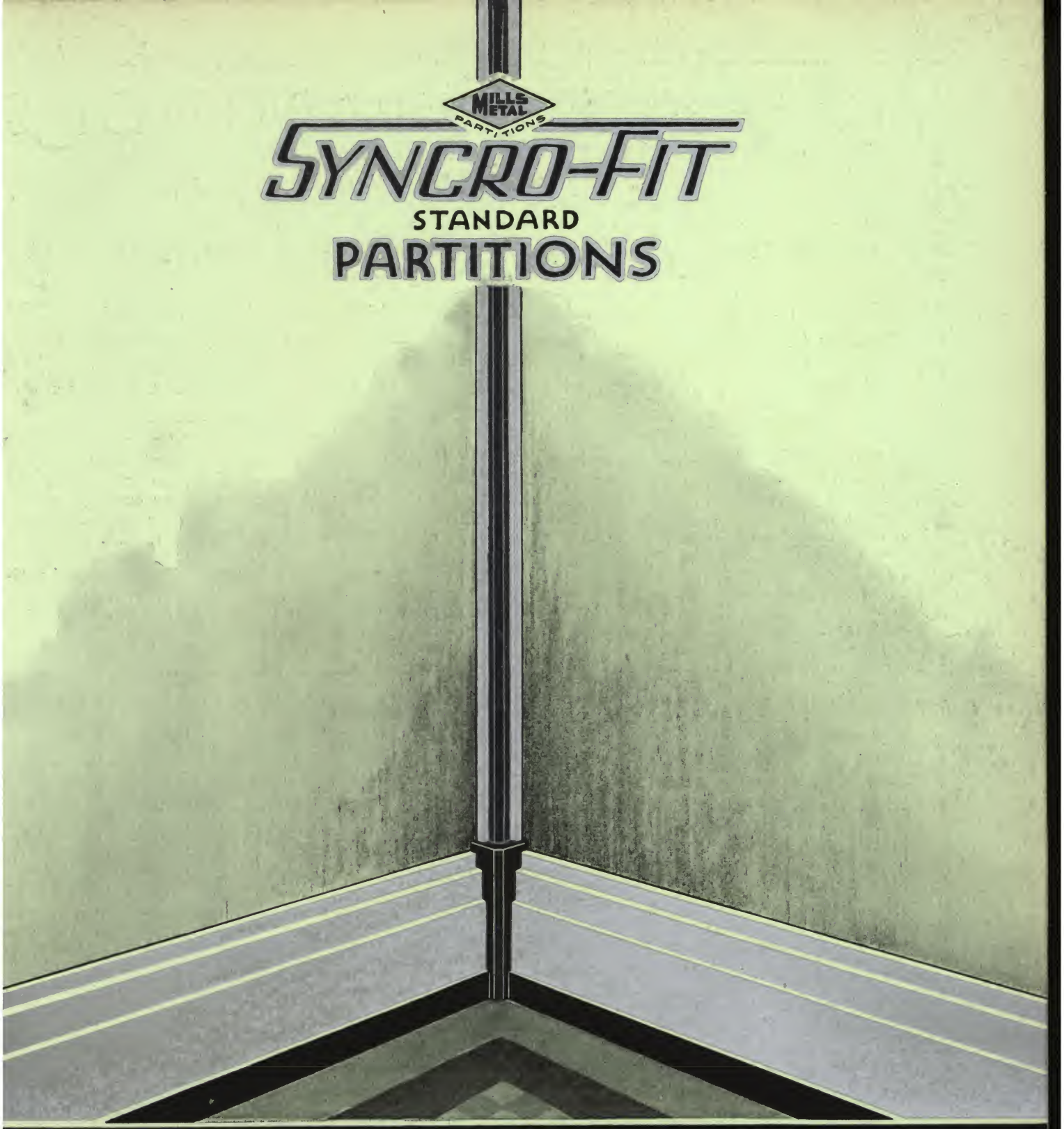
NEW YORK, N. Y. PHILADELPHIA, PA. CHICAGO, ILL. KANSAS CITY, MO.
BUFFALO, N. Y. WASHINGTON, D. C. DETROIT, MICH.
BOSTON, MASS. NEWARK, N. J. CINCINNATI, OHIO PITTSBURGH, PA.

"ORGANIZED TO SERVE NATIONALLY"

MILLS METAL PARTITIONS

SYNCRO-FIT

STANDARD PARTITIONS



FOR EVERY PARTITION NEED

MILLS METAL PARTITIONS

BY THE SYNCRO-FIT METHOD

A MODERN DEVELOPMENT IN PARTITION CONSTRUCTION DEVELOPED AND PATENTED BY MILLS

Executive Office Partitions	Commercial Partitions	Marblmetal Toilet Partitions
General Office Partitions	Standard Toilet Partitions	Beauty Parlor Partitions
Unit Showers	Shower and Dressing Room Partitions	Cubicles and Screens

EXPERIENCE AND AIMS OF MILLS ORGANIZATION

THE MILLS COMPANY is an organization engaged exclusively in the design and production of metal partitions, as listed above. Truly, *"A Mills Metal Partition for every purpose."*

The officers of THE MILLS COMPANY, as well as many men in the organization, were pioneers in the Metal Partition Industry. Many of the metal partition ideas, now so widely used, originated with this organization.

THE MILLS COMPANY is constantly alert to find better ways of assuring beauty and permanency in partitions of their manufacture. This is responsible for the development of the Syncro-fit Method which supplies an unlimited number of combinations without the expense of special production. New coloring, perfect imitation of wood graining—two-tone color effects, or two-metal effects, are economically possible under this method.

A large modern manufacturing plant and skilled engineering and research departments with many years of experience and the will to strive for constant betterment are here at your command.

On the following pages, we illustrate many of the advanced features of the *Mills Metal* Line.

A FEW INSTALLATIONS

Waldorf Astoria Hotel	General Electric Co.	United Shoe Machinery Co.
Bell Telephone Buildings	Pennsylvania R. R.	Goodyear Tire & Rubber Co.
General Motors Corporation	R. C. A. Radiotron Co., Inc.	Aluminum Co. of America
N. Y. World Telegram Bldg.	Eastman Kodak Co.	Westinghouse Electric Co.

THE SYNCRO-FIT METHOD

What It Is

The Syncro-fit Method is a method of fabricating sheet metal into structural units without the use of bolts, screws, or welding, but still providing a strong, rigid assembly.

It may be adapted to the manufacture of almost any sheet metal product, such as furniture, cabinets, doors and trim, radiator enclosures, heat ducts, etc. The members are rigidly interlocked by a sewing process, entirely developed and perfected by The Mills Organization.

As shown in the close-up illustration, after the various parts of a partition are assembled, they are run through a machine or gripped in a hand tool. The pressure exerted causes a series of indentations in both pieces of steel to be joined, interlocking these in such a manner that they become practically one unit. The strength of the joint thus formed can only be appreciated by examining a finished installation.

If re-design or change of sizes should be necessary or desired, in the field, the material can be ripped apart and re-sewed in the field with a simple hand tool.

What It Means to the Architect

The Syncro-fit Method of assembly makes it possible for the architect to obtain, at the very lowest cost, exactly the type of partition installation he desires for any particular building. No longer is he limited to stock dimensions and types.

The modern trend to color and metal combination could not be produced under the old methods, without excessive cost. Under the Syncro-fit Method, two and three-tone color effects can be obtained with no increase in cost, and two and three-tone metal effects, with only the differential in cost between steel and the metal or metals selected.

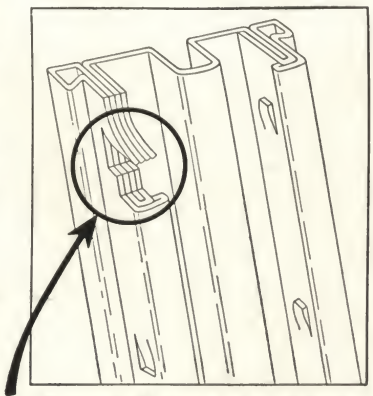
The Syncro-fit Method makes capable of production, the only partition in the market, using the same post clip for every condition, namely, straightaway, corner, or three-way.

THE MILLS COMPANY is the first to adopt 4-in. panels which give the architect the advantage of easy designing. The architect can now make his plans in feet and fractions of feet.

It is the only partition on the market in which it is possible to make the floor layout without knowing at the time whether each floor attachment point is straightaway, corner, three-way, door jamb, etc. The ceiling post is automatically adjustable for any ceiling height, and the ceiling post goes through the standard cornice. All horizontal members are tenon ended into the vertical.

It is the only partition in which the architect may change glass height, width of chair rail, and width of transom bar to meet a particular design without prohibitive cost.

The Syncro-fit Method permits panel construction of single sheet, ⅜-in. laminated, 1¾-in. insulated or 2¾-in. flush type, with the same sections, and with all these construction advantages, this partition has a distinct architectural appeal.



Cut-away Showing a Sewed Joint

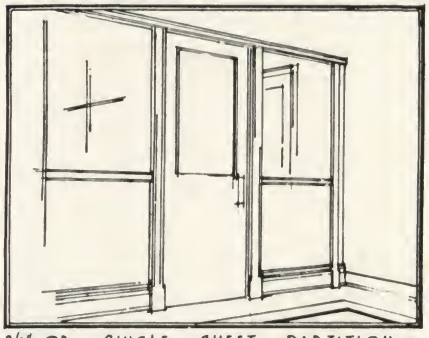
THE SYNCRO-FIT METHOD OFFERS UNLIMITED DESIGN POSSIBILITIES

To keep the cost down, it has heretofore been necessary for partition manufacturers to absolutely standardize their products. With the use of the Syncro-fit Method, the architect has an unlimited number of design possibilities. Panel walls, or straight flush walls—with or without chair rail—with or without transom bar. In fact, with this method, each part is optional. For convenience, we manufacture standard in the following cornice heights:

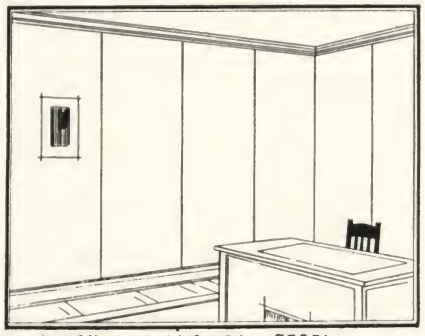
7 ft., 4⅞ in.
8 ft., 9⅞ in.
9 ft., 3 in.
10 ft., 1½ in.

and panels in standard width of 4-in. multiples from 20 to 60 in.

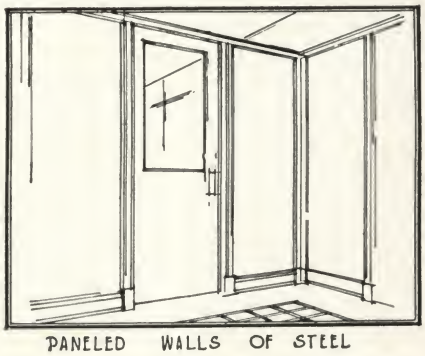
The tendency toward two-tone color effect and two-tone metal effect can most economically be produced under this method.



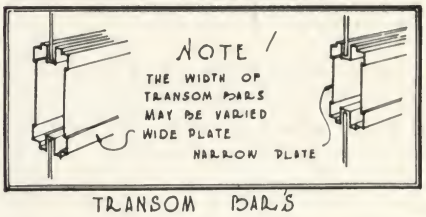
⅜" OR SINGLE SHEET PARTITION



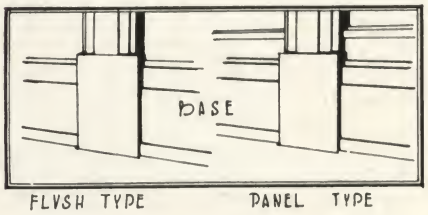
FLUSH WALLS OF STEEL



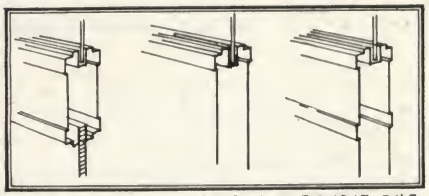
PANELED WALLS OF STEEL



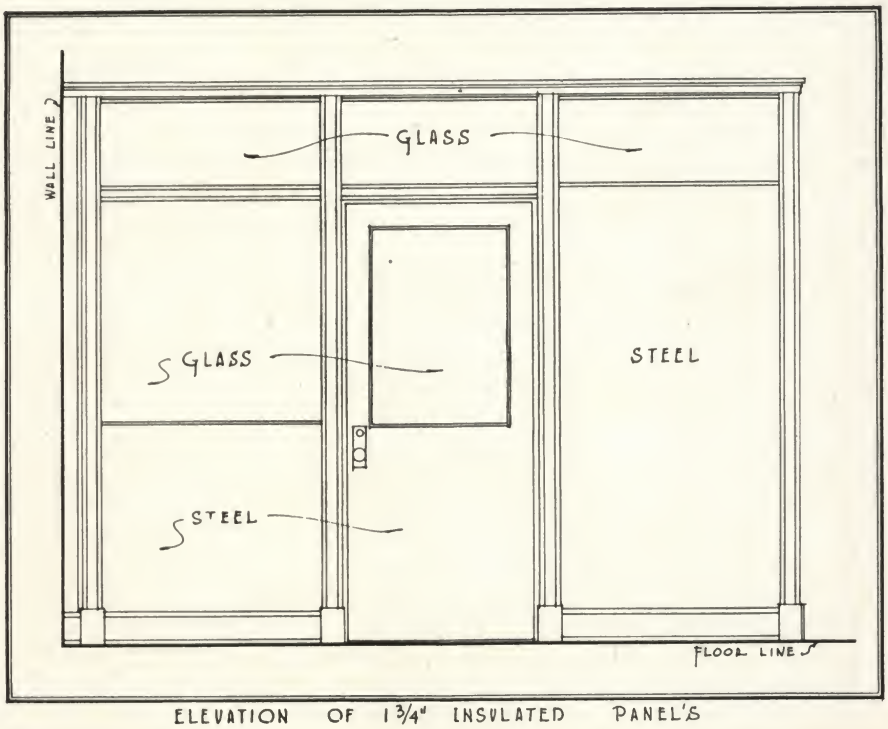
TRANSOM BAR'S



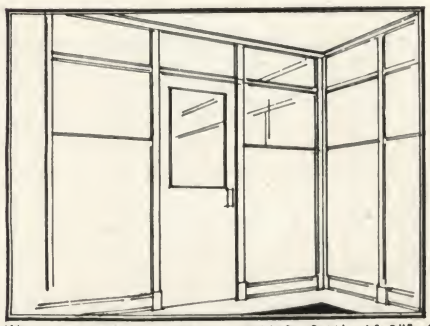
FLUSH TYPE PANEL TYPE



VARIOUS CHAIR RAIL CONDITIONS



ELEVATION OF 1¾" INSULATED PANEL'S



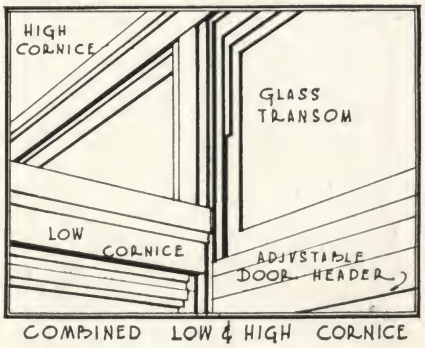
HIGH GLASS LINE - CHAIR RAIL ABOVE 42"

THE SYNCRO-FIT METHOD GIVES TO THE ARCHITECT UNLIMITED FREEDOM IN THE USE OF TWO TONE COLOR OR METAL COMBINATIONS AT A LOW COST

MODERN INTERPRETATIONS OF WHITE METAL IN SATIN OR MIRROR FINISH WITH BLACK TRIM - HARMONIZING COLOR COMBINATIONS - PERFECT REPRODUCTIONS OF WALNUT, OAK OR MAHOGANY WITH BLACK TRIM

ALL ARE OBTAINED WITH STANDARD SECTIONS

THE MILLS CO. CLEVELAND O



COMBINED LOW & HIGH CORNICE

SYNCRO-FIT DESIGN AND CONSTRUCTION FEATURES

On this and following pages are illustrated some of the striking features of beauty of design with strength and rigidity of construction secured by the Syncro-fit Method.



Figure 1

Photograph of a typical inside corner with standard inside corner plinth and corner mold in place, giving a neat streamline appearance.



Figure 2 (Above)

A close-up of standard corner showing neat cornice corner cap—obtained with no mitre cut.

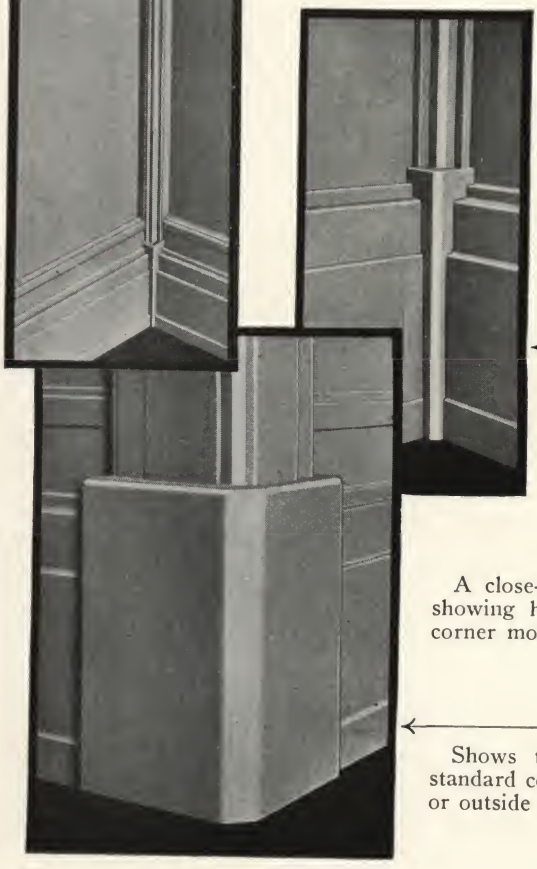


Figure 3

A close-up of the inside corner plinth showing how it fits over the base and corner mold.

Figure 4

Shows the outside corner plinth. A standard corner mold is used either inside or outside with standard corner post caps.





Figure 5

Shows partitions of two different cornice heights joining. Note how the lower cornice frames into the standard posts with the appearance of being specially built, although it is all built out of standard sections. Notice the adjustment over the door, allowing the door to be brought down to proper relation with the floor, no matter what the floor conditions may be. The transom is operated by a concealed interior direct acting operating device, transom moves directly with the operating handle.

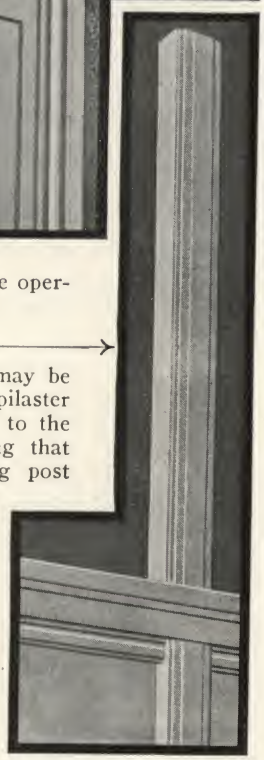


Figure 6

The ceiling post above the cornice may be left plain or ornamented with the pilaster cap. The top of the post is attached to the ceiling by means of a standard fitting that will meet all conditions. The ceiling post goes through the cornice allowing the cornice then to continue uninterrupted across the front, completing the neatness of the design.

Figure 7 (Below)

Shows the straightaway plinth, together with base, showing how the base can be fitted over any necessary interference. The base is also adapted to fitting around plaster walls.

The structural member for ceiling post is the same as the reinforcing member in the cornice. The fact that the cornice trim snaps with a continuous snap, assures a close fit on all cornice joints, eliminating the necessity of splice plates. The partition can be readily split vertically for use in wainscoting, carrying the same panel design entirely around the room if desired.

SYNCRO-FIT DESIGN AND CONSTRUCTION FEATURES

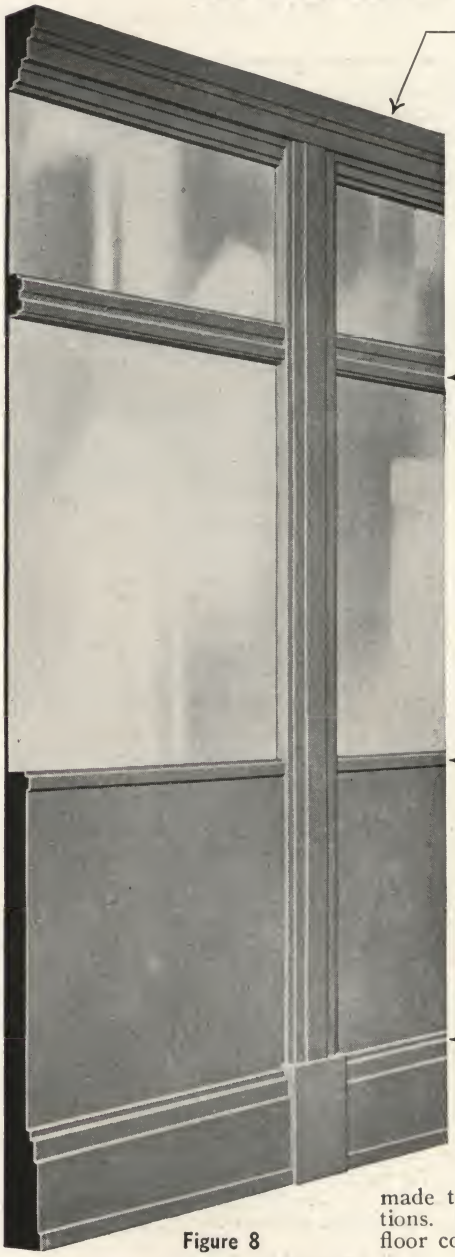


Figure 8

CORNICE

The structural member of the cornice is an exceptionally strong, light tubular section which tightly grips along the entire top of the partition panels, holding them in rigid alignment. The cornice trim of this structural member is held by continuous snap-on construction which insures perfect butt joints where cornice splices are necessary. The cornice is available for wiring at any point, and in taking down and re-erecting produces 100% salvage due to the fact that all cornice trim cut-offs are square, no matter whether they are used in straightaway, corner or three-way intersections. There is no necessity of welded mitres and tees being made in the factory to assure good joints in the field.

TRANSOM BAR

Although we recommend $2\frac{13}{16}$ in. as standard transom bar size, it is possible to expand it in width as may be desired to fit in a particular architectural scheme. Notice the transom bar is made of two plates and two members. This sewed seam is illustrated on page two. The two plates tenon end into the vertical posts and are tightly sewed in position.

CHAIR RAIL

The chair rail shown in the illustration at the left is narrow stream-line design, with $1\frac{3}{4}$-in. insulated panel. If preferred, the chair rail can be widened to conform in design with the transom bar, or to take care of single sheet, $\frac{3}{8}$ in. laminated or $1\frac{3}{4}$ in. insulated as shown in the illustration. Note that due to the method of construction of the chair rail and transom bar, horizontal wiring conduits are automatically provided.

BASE

The 6-in. base is constructed of heavy gauge material properly designed for appearance and utility. The base is furnished in standard lengths, to conform to the panel standards. It is snapped on either side of the partition, over the base clip, to facilitate wiring application of plugs and wiring receptacles. It is locked tightly in place by a plinth block which hooks on with a positive hook. The base clip is adjustable up and down; the base, therefore, is made to closely adhere to the floor under any conditions. Can be raised or lowered for carpet or linoleum floor covering.

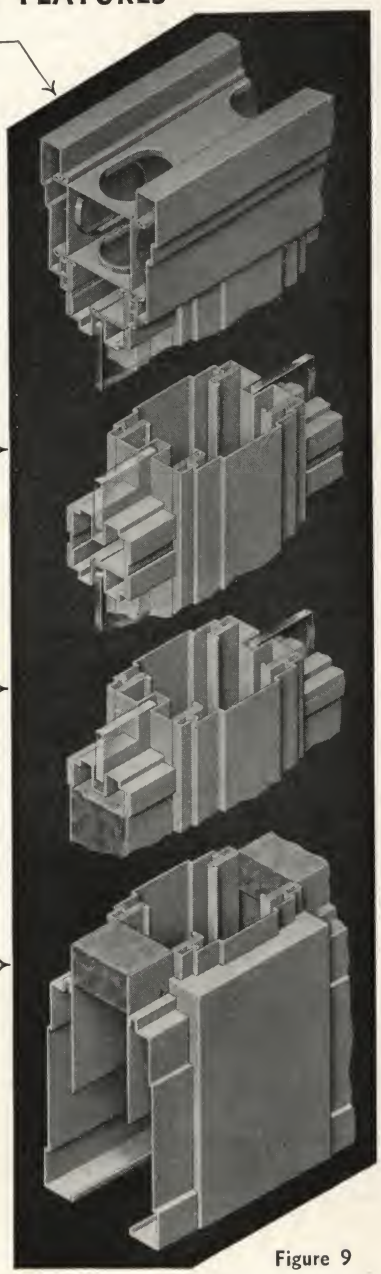


Figure 9

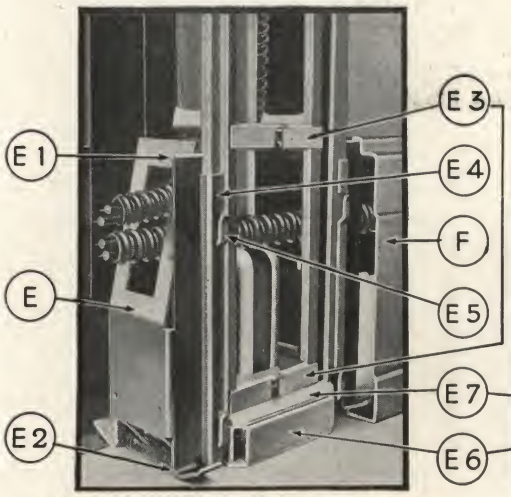


Figure 10 Base Clip

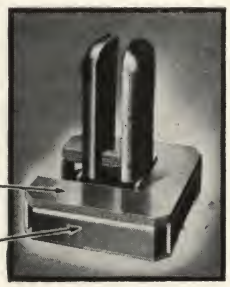


Figure 11 Floor Connection

BASE CONSTRUCTION

Figure 10 shows a section through the bottom of the post with the post cap, plinth blocks and base removed, in order to show the base clip.

"E" is the base clip. *"E 1"* and *"E 2"* are the top and bottom members of the base clip over which the base moulding (*"F"*) snaps. *"E 4"* is the shoulder of the base clip, extending around the post to hold the base clip rigidly in position. *"E 5"* is the top and bottom hook over which the plinth block locks.

The post clip is shown at *"E 3."* Notice the bottom one fits over the floor connection. The master shim (*"E 6"*) and its "U" shaped plate shims (*"E 7"*) can be added or taken away even after the partition is erected. The removal of the master shim allows partition to drop down for easy moving and changing.

The floor connection (Figure 11) allows 2-in. adjustment for uneven floors.

The entire partition layout can be made on the floor before any of the material arrives, due to the fact that it is not necessary at the time the floor screw is put in to have either the floor connection, or the accurate partition layout, as a floor condition for a straightaway, corner, three-way or door jamb are identical. BX cables can be carried through the base clips, as shown in the illustration, also vertically through the posts.

SYNCRO-FIT DESIGN AND CONSTRUCTION FEATURES



Figure 12 Post Clips

POST MEMBERS

The post is fabricated from two rolled shapes; a flange head and a plain channel. The face of this channel is formed into various contours to meet any condition. The outside last return of the flange head is used for holding the post clip (C) or pilaster cap in place by continuous snap-on over the entire length of the post member, insuring absolute tightness over the full length of the post.

The post members are rigidly sewed to the panel sheets or formed glass section as illustrated on page 1. The panels are held in perfect alignment by means of a two-piece clip illustrated in Figure 12. This same post clip is used for straightaway, corner, or three-way condition and is put in place without the use of bolts, screws, or distortion of the post member. It holds the posts in accurate relation to each other, due to the fact that one half is in compression and the other in tension. The clip is designed to allow wiring through any post in the vertical direction and can be placed in any position in the vertical length of post, as they do not depend on special preparation of the post for attachment. The post cap or pilaster cap is held in place by continuous snap-on, over the entire length of the post member, insuring absolute tightness over the full length of the post without rattle. The post clips and floor attachment are rustproofed.

CORNER CONSTRUCTION

Figure 13 shows a standard corner, with cornice trim removed from one side. Note the reinforcing member, and how it is rigidly attached to the top of the panels by means of crab clips guaranteeing perfect alignment and permitting outlet for wires at any desired point.



Figure 13



Syncro-fit Partition Installation—Executive Office



Syncro-fit Partition Installation—Executive Office

MILLS METAL OFFICE PARTITION SPECIFICATIONS

Work Required—As contemplated under this specification includes the furnishing of all labor, material, equipment, and services necessary for and reasonably identical to the furnishing and erecting, and glazing of all partitions shown on the drawings, and as hereinafter specified. (Except items noted as being done by others.)

The Partitions—Shall be built by the Syncro-fit Method, as manufactured by THE MILLS COMPANY, 965 Wayside Road, Cleveland, Ohio. The partition shall be built in standard 1¾-in. insulated panels, in widths of 4-in. multiples. No panel shall exceed 60 in. in width. The height shall be as shown on drawing (7 ft. 4⅞ in., 8 ft. 9⅞ in., 9 ft. 3 in. or 10 ft. 1½ in. to the top of the cornice trim).

Panel—Intersections or posts shall be designed so straight run, corner or three-way post condition can be formed of standard panels, using the same standard clips. These clips shall be designed to properly space, and rigidly truss the partition in a vertical position without possibility of weaving. Suitable provision shall be made for attaching partitions to the floor and at the same time adjusting them for uneven floor condition. The partition base shall be constructed in panel sections. It shall be fastened so that it can move up and down, follow the contour of the floor and at the same be easily removed from either side to facilitate wiring. At each post intersection, the base shall be neatly covered with a close-fitting plinth block, locked in place. Outside and inside corners shall be filled with a neat corner mold.

Wiring conduits shall be provided in all horizontal members. Cornice trim shall be so constructed that the Tee partition can be removed from a run, without replacing the cornice.

Doors—Shall be 1¾ in. thick, flush type and sound insulated, reinforced for hardware.

Transoms—To be center pivoted type to harmonize with architectural lines of partition.

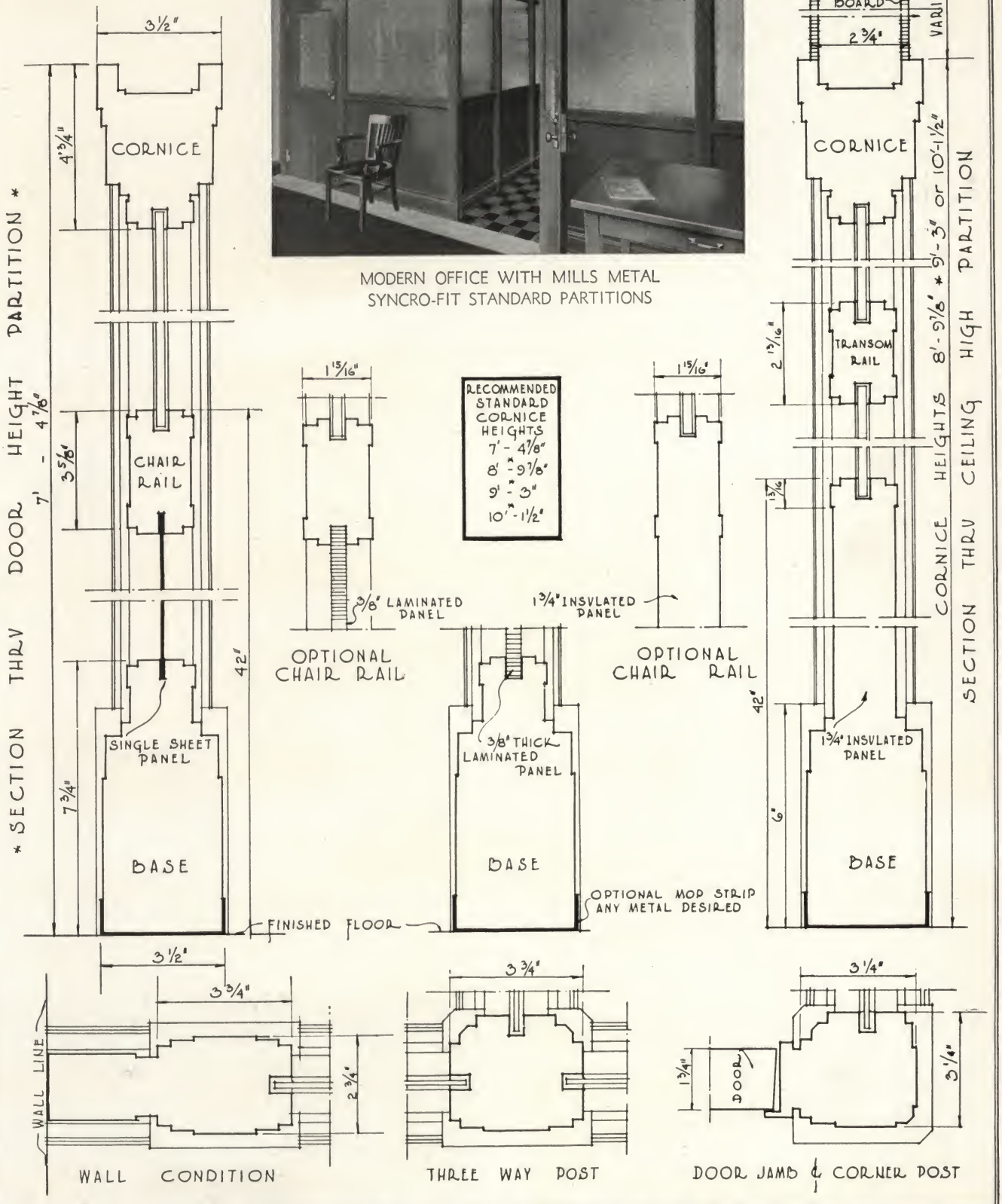
Hardware—For each door to consist of 2—4½x4½-in. butt hinges, cylinder lock sets and door check. Transom hardware to be an operator of concealed type with external knob, extending through posts directly connected so that the transom moves at the same speed as the operating handle.

Ceiling Posts—Shall be furnished where required for exceedingly long runs of door height partition, shown without intersecting partition. Ceiling Posts shall be concealed within the partition and go through the cornice without cutting. Ceiling posts shall conform in design and size with other standard posts.

Finish—All partitions shall be thoroughly cleaned, free from oil, and given one coat of rust-proof enamel, baked on, and thereafter three coats of semi-gloss enamel, baked on separately. Color as selected.



MODERN OFFICE WITH MILLS METAL
SYNCRO-FIT STANDARD PARTITIONS



DETAILS OF MILLS METAL OFFICE PARTITIONS

'SYNCRO-FIT METHOD'

MARBLMETAL TOILET PARTITIONS

MARBLMETAL

To insure the permanent freshness of toilet rooms THE MILLS COMPANY engineers developed Marblmetal. A metal slab partition with all the advantages and none of the disadvantages of marble. The cost is about one-half that of marble. The absolutely flush surface with no corners, or crevices to gather dust, dirt or germs, makes thorough cleansing a simple matter.



CONSTRUCTION

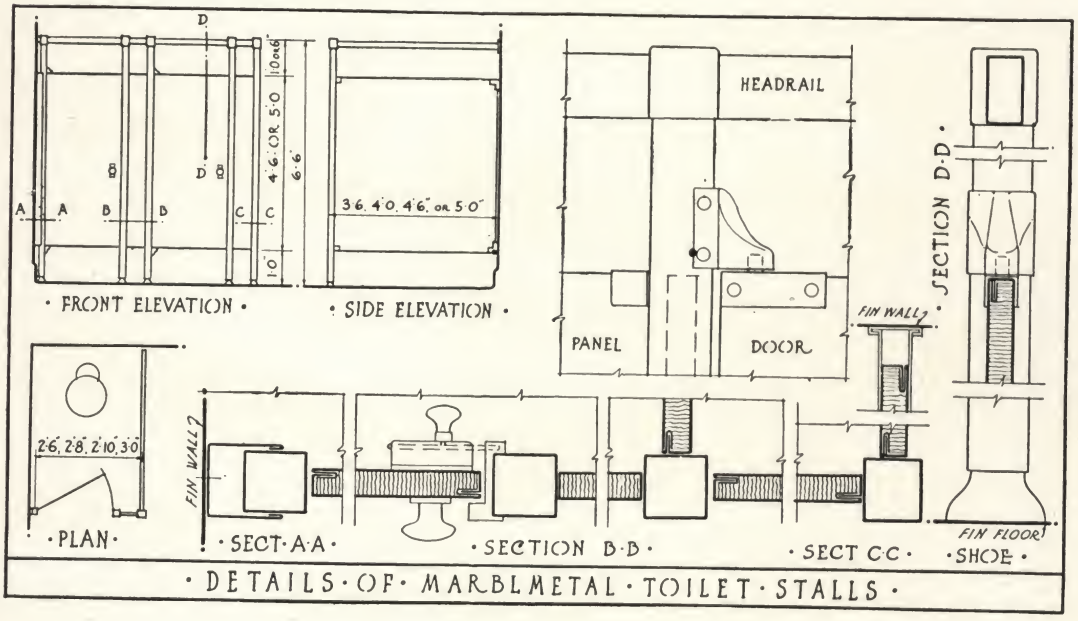
The panels and doors are constructed with two sheets of steel interlocked on all four sides, giving five thicknesses of metal around the entire perimeter. The panels and doors are welded at all corners, forming a solid slab, ¾ in. thick, holding a ⅝-in. fibre filler between. This filler is applied to the sheets, with a special binder, under pressure, making the panel flat, strong and rigid. These panels are non-porous, absorb no odors and can be finished to harmonize with your color scheme. They can be inexpensively refinished as the years go by.

FITTINGS

All panel trim and headrail post caps are enameled the same color as the partitions. Door hardware will be of aluminum in a ball burnish finish.

The post shoe will be of white metal cadmium plated by the Udylite Process.

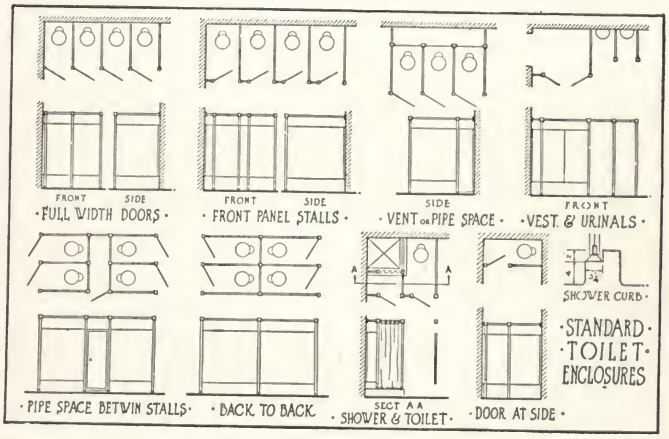
These enclosures meet the requirements of the most exacting sanitary engineers. Thru-bolted hardware and strong wall attachments are features of these enclosures.

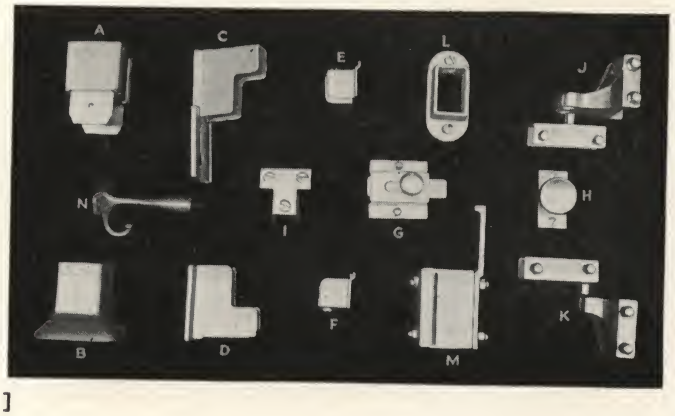


STANDARD HARDWARE AND FITTINGS

"A"—Post Cap
"B"—Mills Famous Internal Shoe
"C"—Top Wall Bracket
"D"—Bottom Wall Bracket
"E"—Top Panel Clip
"F"—Bottom Panel Clip
"G"—Sliding Latch
"H"—Knob
"I"—Tee Panel Bracket
"J"—Top Hinge Assembly
"K"—Bottom Hinge Assembly
"L"—Headrail Wall Bracket
"M"—Combination Bumper and Keeper
"N"—Rubber Tipped Bumper Coat Hook

Note that all hardware is thru-bolted with bonnet head bolts, making the attachment of the hardware positive and secure.



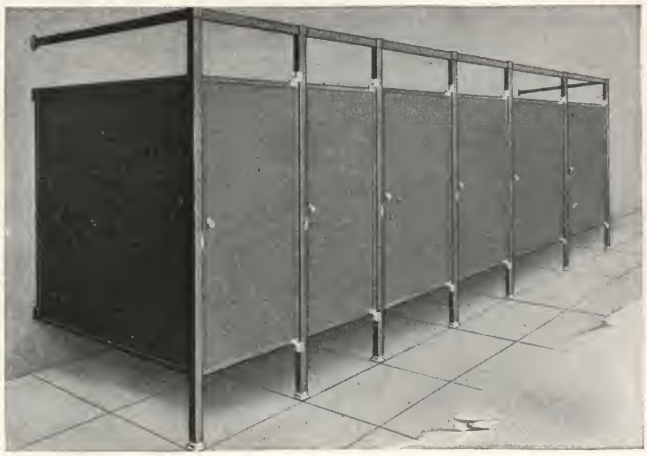


MILLS METAL STANDARD TOILET PARTITIONS

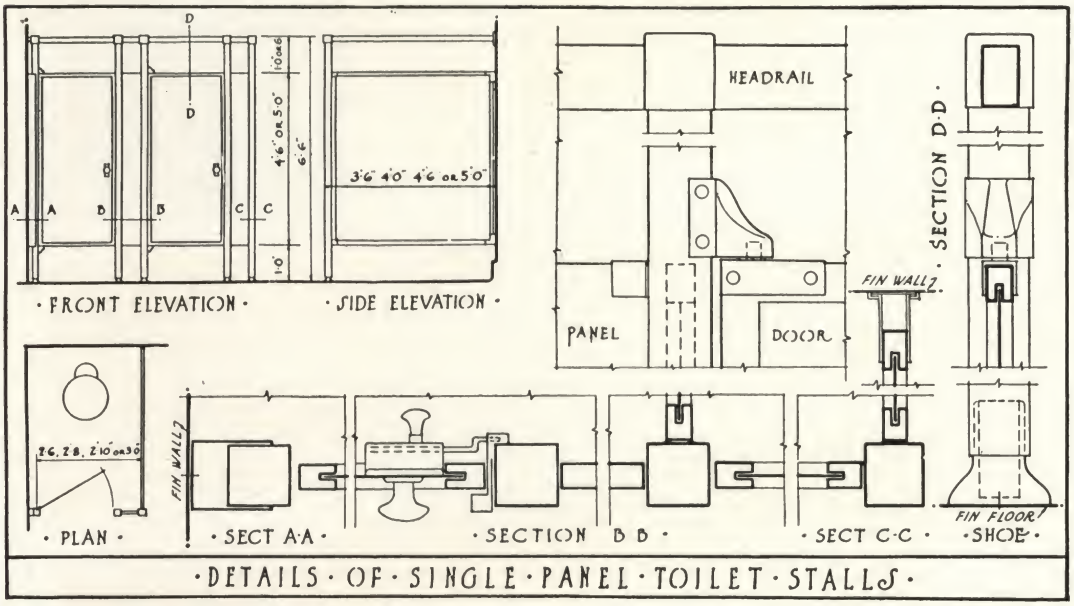
DESCRIPTION

The standard post is 78 in. in height. The standard panels are 54 or 60 in. high, set 12 in. off the floors, allowing 12 and 6 in. respectively, to the headrail. This is in accordance with the Department of Commerce Bureau of Simplified Practice Recommendation No. 101-29.

Built in units to permit any desired arrangement. Legs fit over rather than into shoes, eliminating all lodging places for dirt and not a single opening to admit water or hold moisture.



A Typical Installation

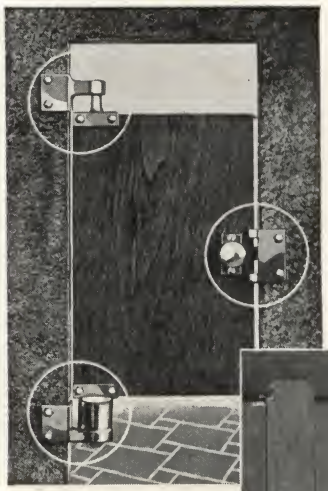


FINISH

Finished standard in olive green or gray. Special colors can be furnished at a small extra cost.

HARDWARE

See preceding page.



Above:
Hardware in Circle Has Been Enlarged to Give Closeup. Note Doors Grained in Perfect Imitation of Wood



Right:
Partial View of Recent Installation

MARBLMETAL DOORS ON MARBLE

Marblmetal doors on marble have beauty, strength, and permanence. In illustration at left notice that hardware in circle has been enlarged to give you a closeup. Notice the perfect imitation of wood graining. These doors can be finished to harmonize with any color scheme. The low cost is a feature.

FITTINGS

The hardware can be furnished for any thickness of marble. The hinges can be adjusted to bring doors to rest at any desired position.

Special hardware has been designed to care for any new type of marble installation.

CONSTRUCTION

These doors are constructed of two sheets of steel interlocked on all four sides, welded at all four corners into a solid slab ¾ in. thick and holding a ⅝-in. fibre filler between. Panels are flat, strong and rigid. Metals other than steel may be supplied at an increased cost.

Mills standard toilet partitions can be adapted to any condition which may arise. The standard compartments, single or in batteries, are economical, strong and will stand extraordinary abuse.

Mills Marblmetal Partitions and doors are used in the finest buildings. Marblmetal doors on marble in their wide range of colorings and grainings provide quality with economy. (On preceding pages will be found more complete description of Mills hardware and trim.)

MILLS METAL COMMERCIAL PARTITIONS

Made in standard size interchangeable units of 20, 30, 40, 50, 60, 80 and 100 in. wide and 42 and 21 in. high. Vertical connections between units are made by means of a 3-in. post to which all units are bolted, the units being joined horizontally by a substantial interlocking I-section. A standard door is interchangeable with any 40-in. unit.

Commercial partitions are adaptable for any factory use. Glass, wire mesh, grilles and ventilators are interchangeable in any standard unit. Panels interchangeable by means of intermediate rail connection.

Telescoping floor channels provide adjustment up to 2½ in. so that the partition adheres tightly to uneven floors. Permits room for electric wires. The posts are punched so that wires may run across entire run of partition if desired. Because of its extreme durability, flexibility and attractive price our Commercial Partition is one of the most widely used partitions.

Finishes

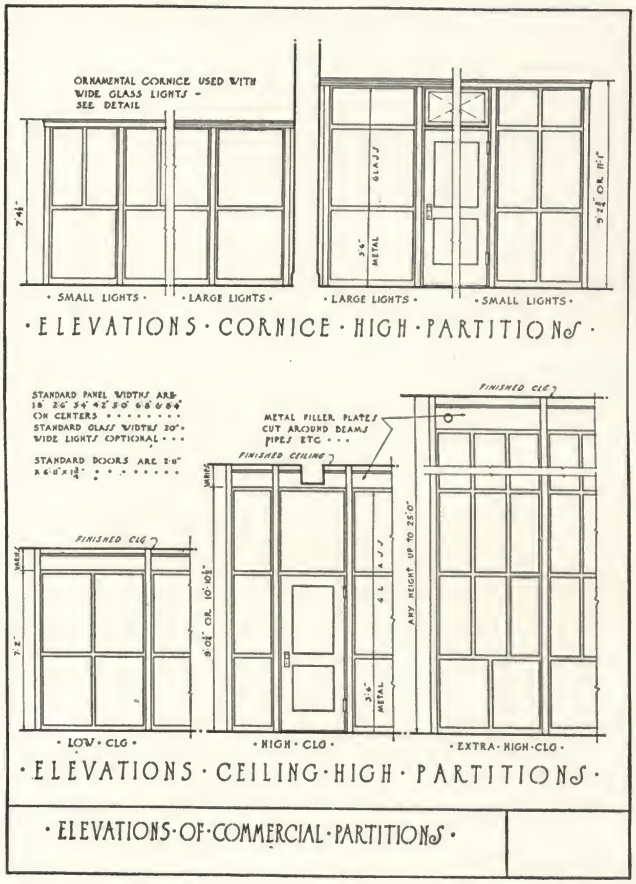
Standard olive green. Any other color specified at small extra cost.

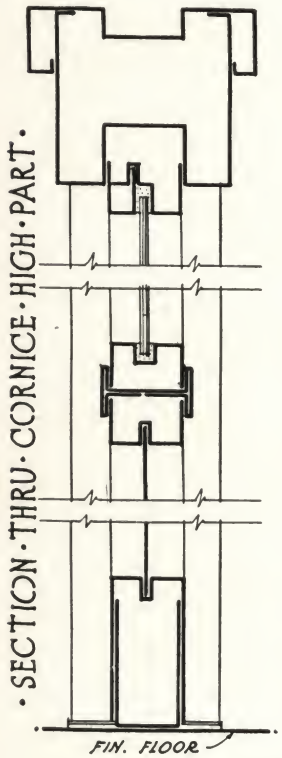
For Office Use

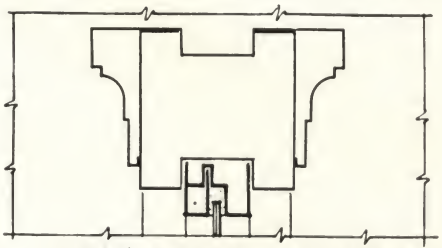
Narrow lights of glass may be replaced with wide lights, and box cornice replaced by an ornamental cornice, transforming the Commercial Partition into a neat and trim appearing office partition which is entirely suitable for many types of office.



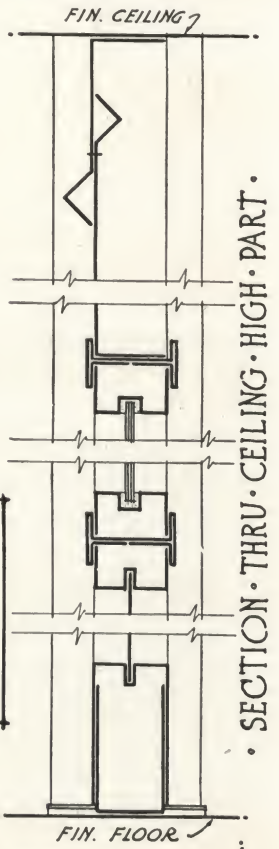
Mills Metal Commercial Partitions
Steel and glass—note exceptional height

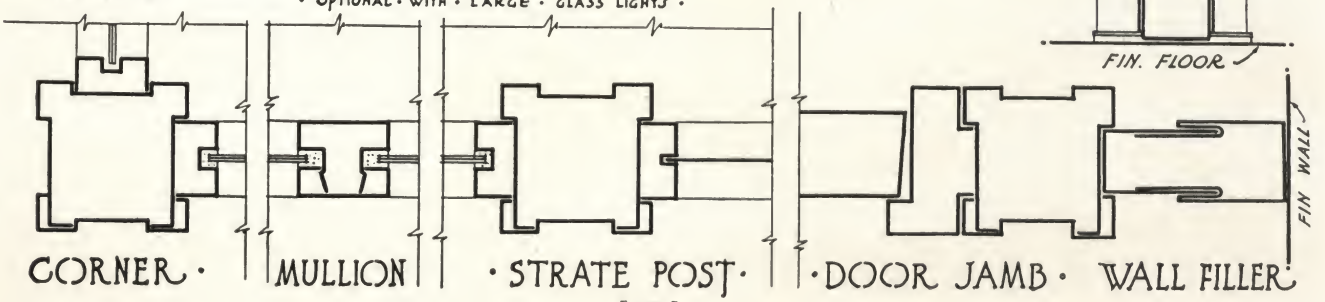






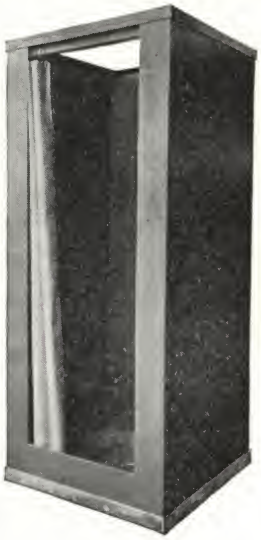
· DETAILS · OF · COMMERCIAL · PARTITIONS · SCALE 3" = 1'-0"





MILLS METAL UNIT SHOWER

The Mills *All Metal* unit shower is easy to keep clean and is absolutely water-tight and leak-proof. It is a self-contained unit, and it is not necessary to use any specially prepared floors or curb, such as marble, terrazzo, concrete or tile, with special waterproofing or lead pans. The natural floor without waterproofing is sufficient. This shower has its own waterproof, rustproof base and curb.



CONSTRUCTION

The walls of the compartment are built of interlocking watertight construction and extend to a height of 84 in. which is above the height of the average shower head. The shower head can be brought over the top or through the back or side.

Being of steel construction with watertight joints which are completely finished before assembly, they will last indefinitely with a renewal of paint every two or three years.

FEATURES

This unit will not chip, sag or crack, due to vibration or settling of the building. It will not absorb odors. It is absolutely sanitary with well proportioned flush surfaces.

FINISH

Can be finished in a variety of colors and is an attractive part of any surroundings.

MILLS METAL HOSPITAL CUBICLES

Our cubicles are manufactured either in Marblmetal or single panel construction.

Either style is built in multiple widths of 6 in. ranging in depth from 30 to 120 in. Where the depth of the cubicle is more than 60 in., an intermediate post is used in the center of the total dimensions. Glass may be either clear, reinforced or translucent, either single strength or ¼-in. thickness.

Overall height is 78 in. off the finished floor with lower panel starting 12 in. off the finished floor and with the glass line started 42 in. off the finished floor. Thus the top of the glass line finished 6 in. below the headrail or 72 in. off the finished floor.



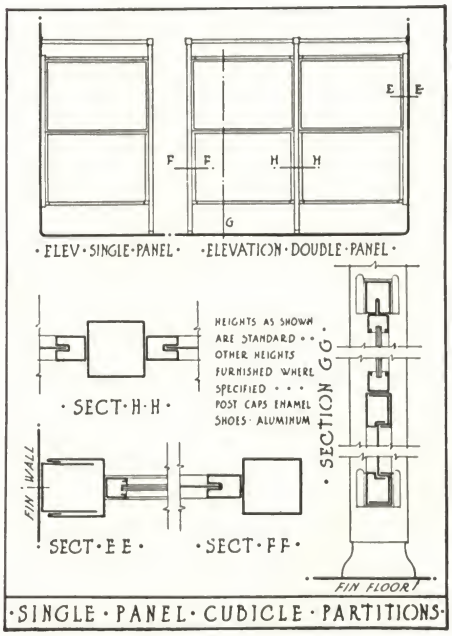
Marblmetal Cubicle Installation

FITTINGS

Shoes are Udylited to prevent rust. Post Caps and Wall Fittings are enameled to match panel finish. All fittings may be Chromium plated at a slight increase in cost.

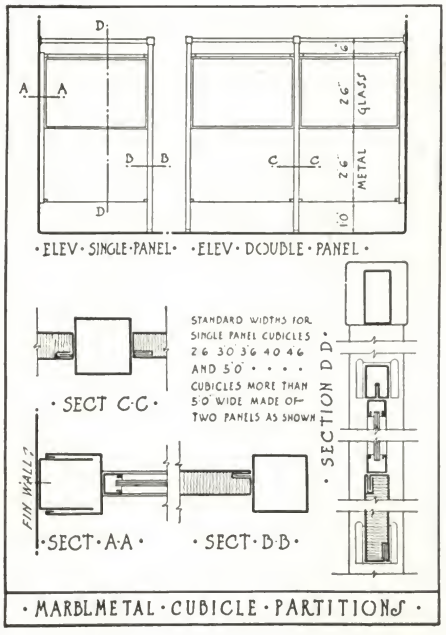
FINISH
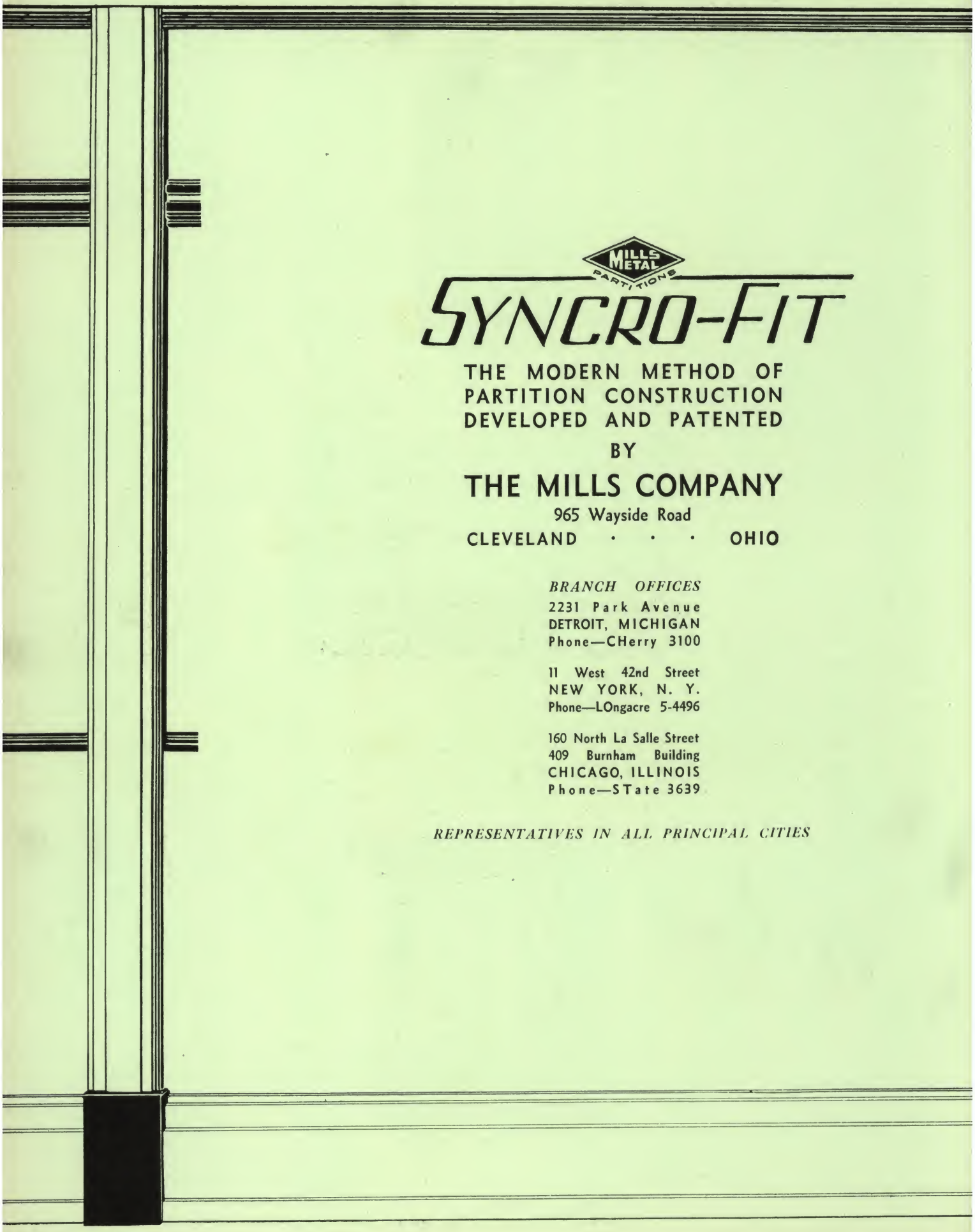
Standard baked enamel in colors to harmonize with the hospital scheme.





Single Panel Cubicle Installation





MILLS METAL PARTITIONS

SYNCRO-FIT

THE MODERN METHOD OF
PARTITION CONSTRUCTION
DEVELOPED AND PATENTED

BY

THE MILLS COMPANY

965 Wayside Road
CLEVELAND · · · OHIO

BRANCH OFFICES

2231 Park Avenue
DETROIT, MICHIGAN
Phone—CHerry 3100

11 West 42nd Street
NEW YORK, N. Y.
Phone—LOngacre 5-4496

160 North La Salle Street
409 Burnham Building
CHICAGO, ILLINOIS
Phone—STate 3639

REPRESENTATIVES IN ALL PRINCIPAL CITIES

AMERICAN STEEL FURNITURE CO.

Manufacturers of Super-steeL Partitions

TELEPHONE
CHelsea 3-1236, 3-1237
GRamercy 5-6334

FACTORY AND SALES OFFICE
27 West 24th Street
NEW YORK, N. Y.

For Suspended Cubicle Curtain Rod Equipment, see Manufacturers' Index

SUPER-STEEL PARTITIONS

For Toilet Rooms, Shower Enclosures, Dressing Compartments, Etc.

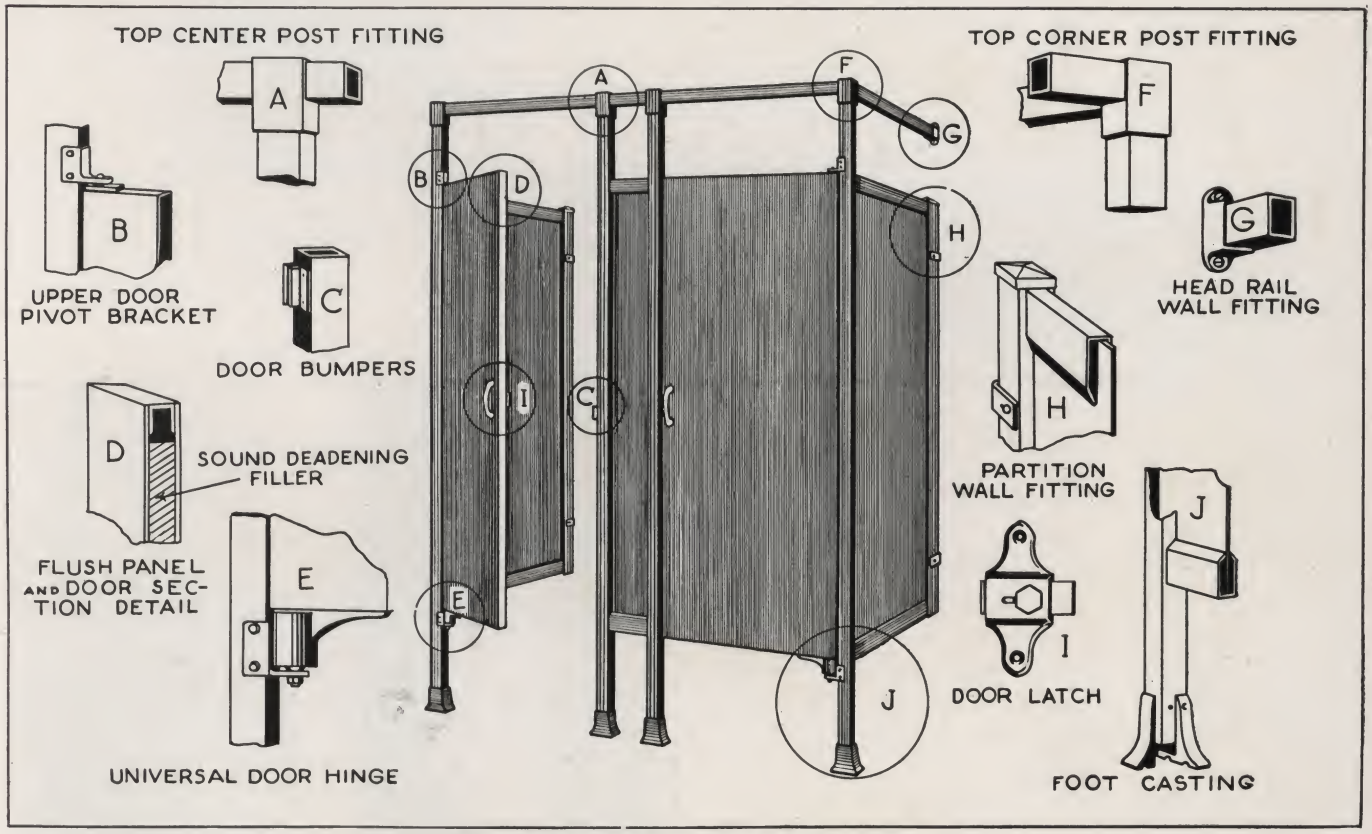
General Construction

Super-steeL Partitions are fabricated from heavy furniture steel stock, full cold rolled and patent leveled. All formed parts such as posts, headrail and sanitary tubing are rolled shapes of heavy gauge. All hardware and castings are of aluminum. Head castings are aluminum and painted to match enclosures unless otherwise specified. Foot castings are aluminum and can be furnished painted to match enclosures or polished to a chrome finish. Door hardware, consisting of hinge brackets, gravity action hinge, pull and slide latch, are all aluminum castings and polished to a chrome finish.

TRADE MARK

Finish

Standard colors are French Grey or Sage Green enamel. We suggest, as a conservative yet attractive finish, our black satin enamel with polished aluminum fittings which may be had at no additional cost.



Construction Features of Super-steeL Partitions

Flush Type

Panels and doors are made up to the thickness of ⅞ in. by cementing two panel sheets to an interior fiber core under a pressure of 5,000 lbs. A one-piece 14-gauge channel frame is then inserted between the sheets around the outside edges and electrically welded in place. All edges are finished off and filled, making a watertight panel. 1¾-in. posts are then welded to the panel making a sturdy and indestructible unit. By this method of construction, the use of solder is avoided as the acid used tends to encourage rust.

Panelled Type

Super-steeL Panels are assembled by inserting the panel sheet into sanitary tubing section which forms the top and bottom rail.

This unit is then forced into the front and rear posts and welded in place, making a rigid and durable panel.

Doors are furnished as described for "Flush Type" construction at the left.

Hardware and castings are the same for both panelled and flush type construction.

THE D. A. EBINGER SANITARY MFG. CO.

"Ebco" Metal Partitions for Toilet Compartments, Dressing Compartments and Screens, Panel and Flush Type Construction

COLUMBUS, OHIO

AGENCIES IN ALL PRINCIPAL CITIES

Other Products

For "Ebco" Kitchen Sinks, Drinking Fountains and Circular Wash Sinks, see Manufacturers' Index.

Materials

"Ebco" Metal compartments are constructed of high grade furniture stock steel, full cold rolled and patent leveled.

Construction

In the Silentsteel flush type, two 20-gauge sheets are electrically welded to a 14-gauge channel frame and the intervening space filled with "Temlock" silencing board, the steel sheets and the filler being cemented together forming a rigid non-vibrating partition unit.

The "Sturdibilt" panel type partition consists of a heavy hollow metal frame completely surrounding a heavy gauge sheet electrically welded together making a rigid partition or panel.

By the "Ebco" method the panel sheet is heat expanded during the welding operation insuring a taut-panel, free from buckles or warp.

Door Hardware

The doors in both types are suspended on encased roller bearing gravity hinges. The alignment of top and bottom hinges are insured by the continuous hinge rod.

Pull and latch are regularly furnished in polished aluminum or brass, chrome plated when specified. Foot castings on both "Sturdibilt" and "Silentsteel" are also polished aluminum or brass chrome plated, when specified.

Finish

"Ebco" partitions are regularly finished in "Krinlac" finish—sage green color, baked on at a high temperature. "Krinlac" artistic finish and durability make it especially suitable for metal compartments.

Prime coat only, special lacquer finishes or baked enamel may be furnished when so specified.

Parcolite

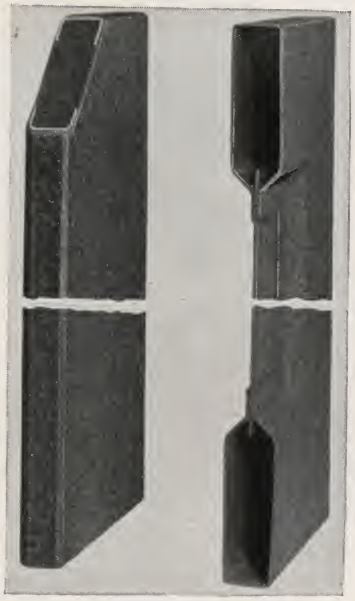
"Parcolite," a patented process of rust proofing applied before the prime coat and may be furnished when so specified.

Steel Doors for Marble or Slate Enclosures

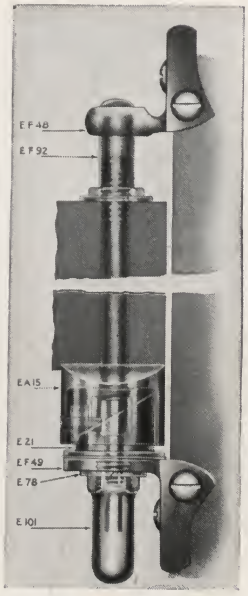
"Ebco Silentsteel" or "Sturdibilt" doors are also adaptable for marble or slate enclosure installation. Doors are of standard construction complete with special hardware for slate or marble. Specify thickness of partitions.



"Ebco Sturdibilt" Type
Panel type with full encircling stile



Typical Sections
Flush panel and recess panel design. For details see paragraph on construction



Top and Bottom Hinges—Brackets Malleable Iron, Standard
Aluminum bronze incased, roller bearing type. Top and bottom hinges aligned by rod continuous through stile of door

FLUSH-METAL PARTITION CORPORATION

Manufacturers of Flushmetal Toilet Stalls, Showers and Dressing Room Compartments, Hospital Cubicles, also Flushmetal Doors and Hardware for Marble Toilet Stalls

TELEPHONE:
STillwell 4-3380

22-14 - 40th Avenue, LONG ISLAND CITY, N. Y.

NEW JERSEY REPRESENTATIVE: Atlas Steel Products Co., Jersey City

Flushmetal Toilet Partitions and Doors

FLUSHMETAL Toilet Partitions and Doors are designed to meet every requirement modern building construction demands as to sanitation, beauty, color, durability, firmness, economy and *prompt delivery*. They are recommended for commercial buildings, public schools, churches, hospitals, etc.

Construction—FLUSHMETAL Partitions and Doors are constructed of two sheets of 20-gauge furniture steel (also in aluminum or other non-corrosive metals if desired), cemented, under pressure, to a sound-deadening core, reinforced on all edges with 16-gauge steel channels, welded and soldered thereto, making a ⅞-in. flush, solid steel sanitary slab. Each partition slab is welded to its 2-in. square, 16-gauge supporting post, *making a single rigid unit*. Headrail is of 16-gauge, 1½x2½ in. special sloping top seamless tubing.

Fittings and Hardware—

Headrail Wall Brackets (1); Headrail Connectors (2) and Partition Wall Fittings (3)—Made of heavy cast malleable iron. Note the two-screw fastening to wall for each casting—an exclusive feature.

Upper and Lower Door Brackets (4) and (9)—Of heavy solid cast bronze fastened to posts with three bolts and cap nuts. Note that the pivot pin is integral with the door.

Two-prong Coat Hook (5)—Furnished for dressing rooms and compartments with door swinging "out." Rubber-tipped Bumper Hook used when door swings "in." Both are of cast bronze.

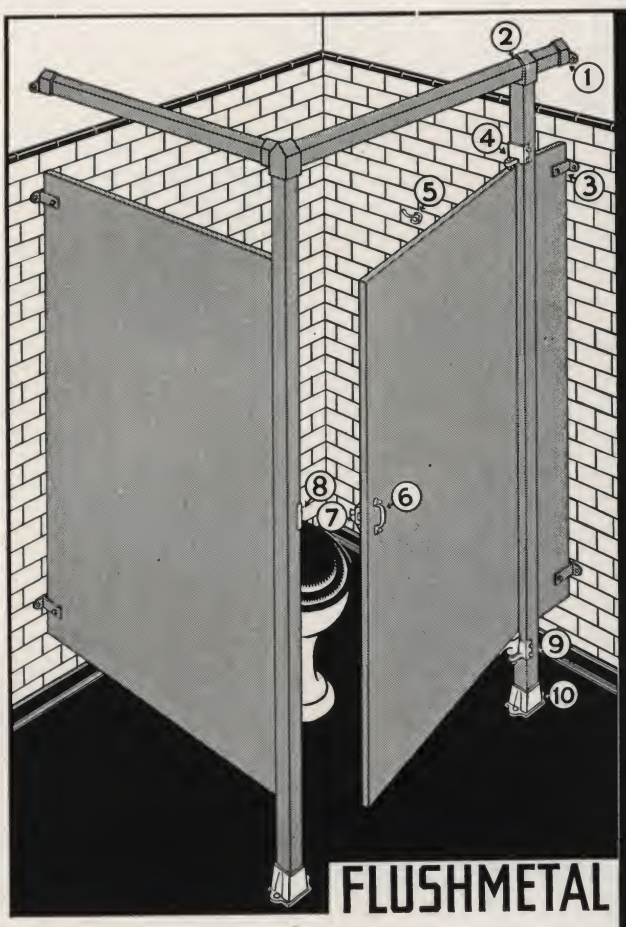
Door Pull and Door Latch (6) and (7)—Of heavy cast bronze and fastened with thru-bolts and cap nuts.

Door Strike (8)—Of brass with heavy resilient rubber bumper which is securely held in place by six prongs deeply embedded in the rubber. The end of the bumper is bent around the post to take shock off screws—an exclusive feature.

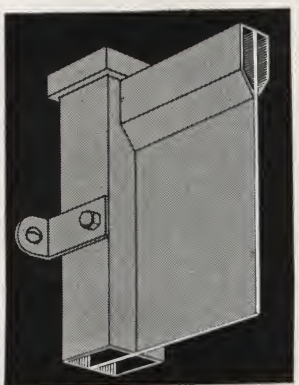
Universal Spring or Gravity Hinge (9)—Furnished with every door, permits the door to remain open at any angle.

Post Base (10)—Solid bronze or aluminum casting. Note the double fastening to floor, providing additional strength and eliminating torsional vibration.

Finish—All the above-mentioned door hardware is available in bronze nickel-plated; bronze chromium-plated, or polished aluminum.







Panelmetal Toilet Partitions

PANELMETAL Toilet Partitions are constructed of two 16-gauge, 2-in. square uprights for vertical members, and two 1 5/6 x 2¼ in. sanitary-shaped tubing for horizontal members. A single 16-gauge furniture steel sheet is forced into the four members, full depth, interlocked and welded to produce a strong single panel. PANELMETAL Partitions are recommended where a sturdy, economical and moderately-priced installation is desired.

FLUSHMETAL Doors, Fitting and Hardware, described above, are furnished with all PANELMETAL Partitions.

Finish

Both FLUSHMETAL and PANELMETAL Toilet Partitions are furnished with (a) heavy gray priming coat—baked on for finishing on the job; (b) finished at the factory in gray or green baked-on enamel or (c) in any other desired finish at slight additional cost.

Prompt Delivery in New York City and Vicinity

Delivery and installation can be had in New York City and vicinity within three days after measurements are taken.

FIAT METAL MANUFACTURING CO.

Fiat Steel Toilet Partitions

FACTORY AND GENERAL SALES OFFICE
1201 Roscoe Street
CHICAGO, ILL.

NEW YORK OFFICE, 101 Park Avenue

BOSTON OFFICE, 11 Beacon Street

For Fiat Shower Bath Compartments and Brass Chrome Plated Shower Doors, see Manufacturers' Index

INTRODUCING THE FIAT PERFECTED FLUSH TYPE PARTITION

The Fiat Flush Type Toilet Partitions and Doors make an ideal installation where beauty of appearance, solidity of construction, durability, and a sound-deadened surface are desired.

Fiat
TRADE-MARK

Rigidity of Panels

The Fiat Engineers have applied the same patented principle in the construction of the panels of these toilet partitions, with reference to the locking device, as that which is embodied in the Fiat Shower Construction.

This gives a water and moisture-proof protection to the asbestos filler between the two steel sheets, thus assuring protection against these elements.

The locking device also reinforces the outer edge of the flush panel where strength and rigidity of construction are imperative.

Specifications

Furnish and install Fiat Perfected Flush Type Partitions and doors.

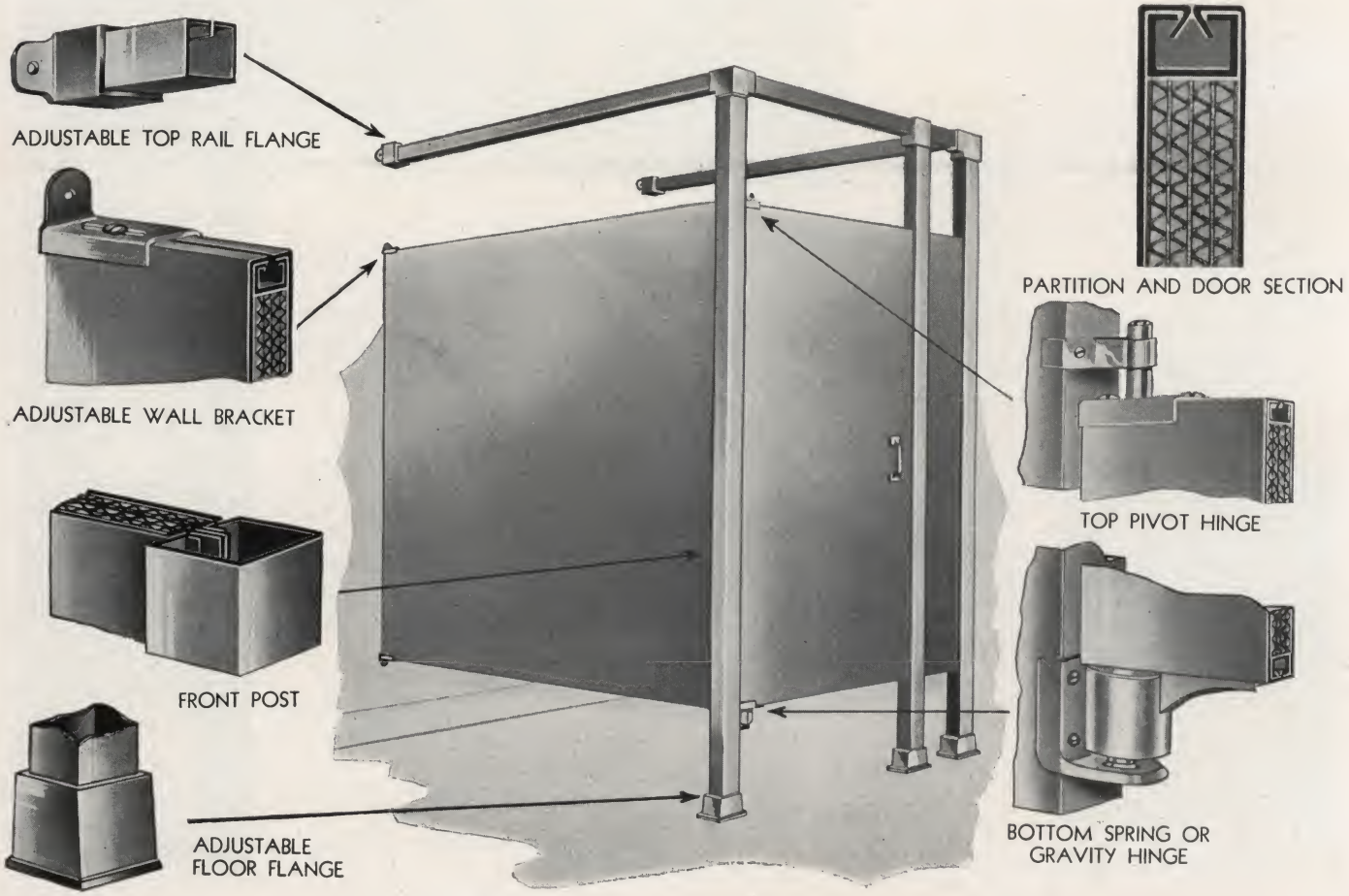
Panels—To be $\frac{13}{16}$ in. *thick*—consisting of two sheets of 22 gauge steel cemented to a filler or laminated core. Panels larger than 54 in. square are to have 20 gauge panels. Panels are to be formed so as to allow insertion into front posts.

Posts and Headrail—To be 16 gauge 1¾ in. square, formed, not drawn, tubing, with reinforcing shoulders.

Doors—To be of flush construction similar to partition panels.

Hardware—Spring or gravity hinges finished same as partitions. Combination coat hook and bumper, door pull, sliding bolt and keeper to be chromium plated.

Finish—Prime coat—or various colors of baked enamel.

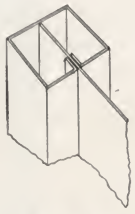


FIAT PANEL TYPE TOILET PARTITIONS AND DOORS

Fiat All-steel and Galvannealed Steel Partitions

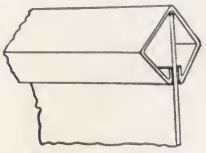
Panels—Are of No. 16 gauge open hearth, copper bearing, pickled, cold rolled, stretcher-leveled sheet steel and inserted full depth into front and back posts and top and bottom panel binders.

Front and Back Posts—Note the double reinforcing shoulders at the seam, which clamp the panel firmly in position at all times—an exclusive Fiat feature which doubles the strength of the posts, insuring the most rigid and sound-proof construction possible. Posts are 1¾ in. square in section made from cold rolled strip steel.

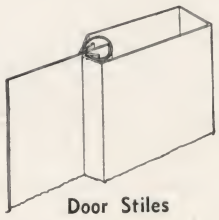


Front and Back Posts

Panel Binders—Top and bottom—diamond shape with Fiat's exclusive feature of two reinforcing shoulders, same as front and back posts, which constantly press against panels, adding sturdiness and positive assurance of rigid and noiseless construction throughout. Binders are 1½-in. outside diameter, diamond shaped, made from cold rolled strip steel. Sanitary diamond shaped binders provide no lodging place for moisture or dirt.



Panel Binders



Door Stiles

Tubing Joints—Where panel binders meet, front and back posts are fully welded.

Overhead Rail—Is of cold rolled steel tubing 1¾ in. square in section.

Door Panels—Are of No. 16 gauge sheet steel, same as partition panels.

Door Stiles—They are 3½ in. wide by 1⅛ in. thick hollow metal with special Fiat tubular lock construction which clamps the panel securely in place. Stiles and horizontal rails are welded to form one piece frame and ground flush.

Fittings—Are aluminum adjustable to allow for unevenness in floors and walls.

Finish

Either prime coat or baked enamel finish can be furnished. It is recommended, however, that all partitions be installed in prime coat and given final finish after installation.

Hardware

Consists of Lawson Gravity or Universal pivot spring hinge, rubber tipped door strikes, chromium plated sliding bar, latch and keeper, chromium plated white metal two-prong coat hook, chromium plated door pull for doors which open out.

When doors open in no pull is furnished but doors are equipped with combination coat hook and bumper.

Specifications for Fiat Panel Type Toilet Partitions

Panels—Shall be 16 gauge open hearth copper bearing, cold rolled, stretcher levelled sheets. Sheets shall be inserted into front and back posts as well as top and bottom panel binders, to their full depth.

Posts and Headrail—Posts to be 1¾-in. square tubing formed (not drawn) with reinforcing shoulders between which panels are inserted full depth. The tubing for posts and headrail to be of similar construction and to be 16 gauge steel.

Doors—Shall have 16 gauge panels—door stiles and rails to be 3½ in wide and 1⅛ in. thick and to be of tubular locking construction so as to clamp the panel securely in place.

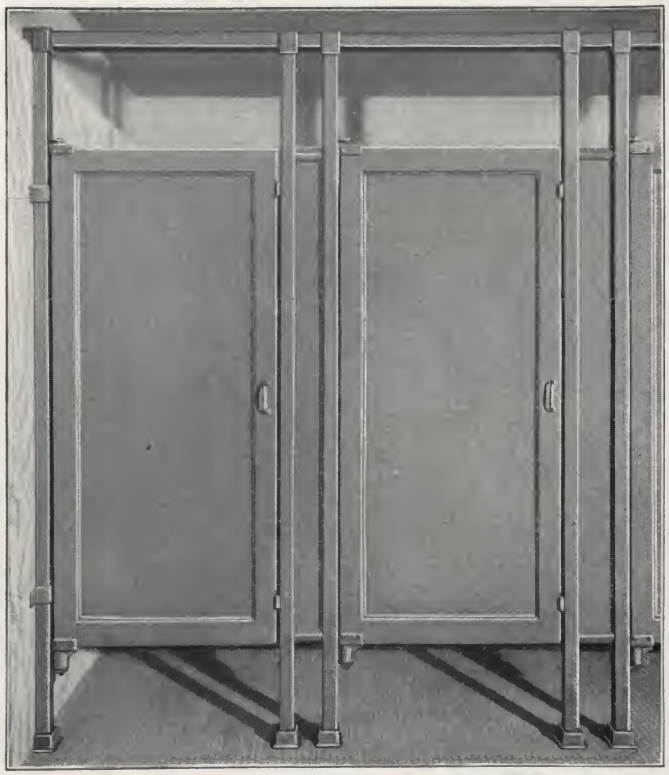
Hardware—Shall consist of spring or gravity hinge. Chromium plated door pulls, sliding bolts and keeper and combination coat hook and bumper. Door Strikes to be rubber tipped.

Castings—To be aluminum throughout.

Finish—Prime coat or various colors of baked enamel.

Fiat Rust-Proof Galvannealed Steel Partitions

Galvannealed steel partitions are recommended for economy and durability. They are of a smooth, special finish surface prepared to receive baked enamel finish. They are furnished at a small additional cost. Construction same as all-steel partitions.



Fiat All-steel Partitions and Fiat Galvannealed Steel Partitions

VENEER-STEEL PARTITIONS

THE HART & HUTCHINSON COMPANY

DIVISION OF THE HART, COOLEY, HIGHTON CO.

NEW BRITAIN, CONN.

BRANCH OFFICES

NEW YORK, N. Y., 101 Park Avenue BOSTON, MASS., 75 Portland Street

PHILADELPHIA, PA., Architects Building, 17th Street at Sansom

AGENTS IN PRINCIPAL CITIES

Products

TOILET ENCLOSURES, SHOWER STALLS and DRESSING BOOTHS.

HOSPITAL WARD SCREENS and CUBICLES, SPECIAL HOSPITAL EQUIPMENT.

Also Steel Lockers, Storage Cabinets, Key Storage Cabinets, X-Ray Viewing Cabinets, Steel Radiator Enclosures, and Humidifying Radiators.

For All-copper Recessed Radiators, see the Hart, Cooley, Highton Co. in Manufacturers' Index.

AN IMPORTANT STATEMENT REGARDING VENEER-STEEL

THE HART & HUTCHINSON COMPANY is the originator of the *flush, sound deadened, fully galvanized* type of steel partitions for toilets, showers and dressing rooms. It is called Veneer-Steel.

Six years of service in all types of building have fully proved all the qualities claimed for it.

Veneer-Steel is the only partition, built of galvanized sheets overlaid on a fibre core and cemented thereto, with all edges solder-sealed. It is therefore so rustproofed inside and out that no other construction surpasses this method at equal cost. All parts other than galvanized sheets are sherardized, except hardware, which is brass, chromium plated. Veneer-Steel is also sound deadened by the use of this core.

Veneer-Steel—galvanized, flush type, is now through Hart & Hutchinson introduction, an accepted design for better grade buildings.

Important points in addition to the flush type, sound deadened and galvanized features:

(1) All framing posts are fluted on four sides, affording a seat for edge of partitions, hardware or attachments. Where there are no partitions this fluting serves to relieve too severe an appearance.

(2) Only seamless 1½-in. square tubing is used.

(3) All posts and headrail tubing are sherardized inside and out, as well as painted inside and out.

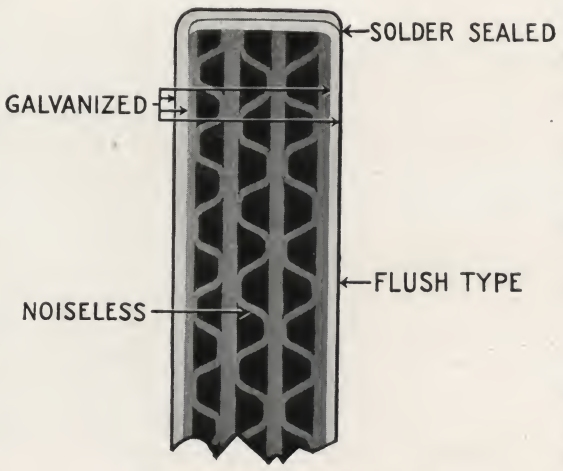
(4) Wherever Veneer-Steel attaches to walls or floor ample adjustment permits easy erection.

(5) An exclusive feature is the adjustable connection at rear edge of partition. These patented connections are designed to keep the edge of partitions away from walls about ¾ in. Experience has demonstrated the difficulty of a satisfactory fit at this point where full length attachments are used because of unevenness of walls, tile coping or a variation from tile to plastered walls. Veneer-Steel connections eliminate this difficulty without loss of privacy, making for better sanitation—permit easy cleaning or repainting of walls.

(6) A better design results from the use of rectangular shapes, slender posts, and flush panels and doors.

(7) Veneer-Steel is especially adapted for attachment to other equipment because its plain surfaces and fine grade hardware compare with best practices.

(8) Veneer-Steel doors, flush type, sound deadened, with special hardware for the purpose, are best for use with marble, slate or other similar materials used in toilet or shower stalls.



Full Size Section of Veneer-Steel

(9) Stainless steel is equally efficient in Veneer-Steel where the use of such material is needed.

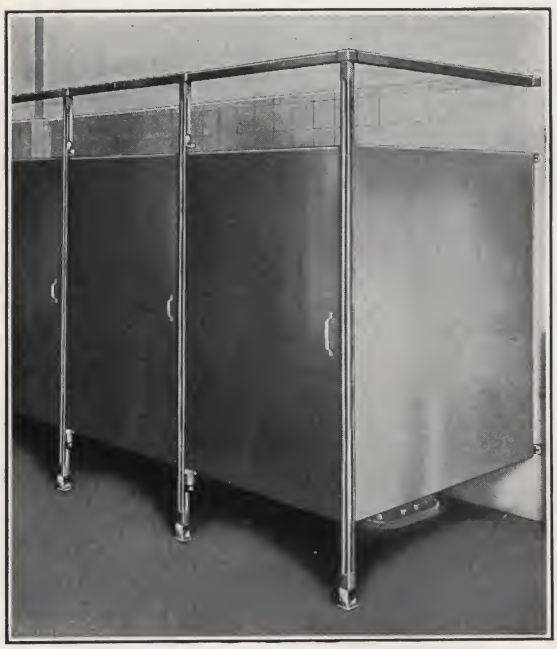
(10) Because of interchangeability of parts, Veneer-Steel may be moved to new locations when necessary without cutting or special fitting, or new parts.

(11) Unstinted service by our own branches and especially instructed representatives, and the guarantee of an old and well-rated company establish Veneer-Steel as a safe material to use.

VENEER-STEEL TOILET ENCLOSURES
FLUSH TYPE—GALVANIZED—SOUND DEADENED



Enclosures with Narrow Doors and Small Panel



Enclosures with Full Doors Without Panel

STANDARD SPECIFICATIONS

Partitions, doors and panels shall be ¾ in. thick, and shall be constructed by veneering a fibre core with sheets of galvanized stretcher-leveled steel of 22-gauge cemented to core under pressure. All edges shall be reinforced and soldered.

Upright framing and headrails shall be of 1½-in. 18-gauge hollow drawn seamless tubing. The upright members shall be fluted to receive edges of partitions and panels and shall be sherardized inside and out.

Rear edge of partitions, where attached to abutting wall shall be connected thereto by special adjustable sherardized connectors, designed to keep rear edge away from wall approximately ¾ in.

Backs for stalls (where utility space is indicated on the drawing) shall be of the removable panel type and shall be made of single thickness 18-gauge galvanized steel. There shall be two removable panels. The lower shall be arranged for easy removal by the plumber for cutting the pipe openings.

Vent tops shall be of 18-gauge steel. Vent doors at end of utility space (where same are indicated) shall be of Veneer-Steel.

(Specify narrow doors and front panels if they are to be used and state width of door desired.)

Finish

All parts shall be galvanized or sherardized. They shall then be thoroughly cleaned and given a heavy prime coat and then finish coats of (gray or green) lacquer. All tubular framing shall be enameled both inside and outside.

Hardware and Fittings

Foot casting shall be of solid brass, 3 ins. high, and be self-draining and adjustable.

The 4-in. door handle and inside latch knob and bolt shall be of solid brass.

Coat hook shall be of solid brass, bumper type, with rubber insert. The 5-in. rubber bumper shall be made of steel sherardized and enameled, and shall be located at center of door.

All brass hardware shall be chromium plated.

Locks (where specified) shall be of the pin-tumbler type with nickel silver keys.

Paper holders are not ordinarily supplied but they can be furnished on special order.

All Veneer-Steel partitions shall equal in every way, to the satisfaction of the architects, the material as manufactured by THE HART & HUTCHINSON COMPANY.

SPECIFICATION—SHOWERS

Shower partitions shall be made of Veneer-Steel panels, flush type, of galvanized 22-gauge steel sheets cemented to a fibre core, with edges solder-sealed. Joints at corners to be held by double sealing pieces. Curtains of 9-oz. white duck to be carried by 1½-in. square split headrail, with curtain rings running inside of rail.

Finish shall be one heavy prime coat, followed by finish coat of lacquer. Foot castings shall be of solid brass designed so as to keep bottom edge of panels ⅛ in. off curb. All as manufactured by THE HART & HUTCHINSON COMPANY.

Note: Architect should provide curbs with 1-in. lip around outside edge.

TYPE T-12 PARTITIONS
MADE OF HIGH GRADE FURNITURE STEEL ENAMELED

A new flush type, sound deadened partition at a new lower price, to meet a demand for lower cost construction where practicable.

This partition is of the same general design as the original Veneer-Steel, fully galvanized, but it is made of furniture steel, not galvanized.

It has a new and less expensive method of sealing the edges of doors and panels, by a novel and very efficient locking strip which is secure and tight.

The same general appearance of Veneer-Steel is also carried out by the fluted posts, and the same high grade brass hardware is used in a nickel finish. Adjustable attachments to walls and floor result in lowest costs for erection.



Lock Seam Edge
Patents Applied For





Partitions and Doors ¾ In. Thick

STANDARD SIZES FOR TYPE T-12, OR VENEER-STEEL

Partitions and Panels

Heights—54, 60, 66 and 72-in.
Widths—6 to 60-in. inclusive, by 6-in. intervals.

Doors

Heights—54, 60, 66 and 72-in.
Widths—18 to 34-in. inclusive, by 2-in. intervals.

SPECIFICATIONS

Partitions, doors and panels shall be ¾-in. thick, and shall be constructed by veneering a fibre core with sheets of stretcher-leveled steel, 22-gauge, cemented to core under pressure. Edges to be sealed by special lock seaming, which shall be secure and tight fitting. (Specify narrow doors and front panels if they are to be used and state width of door desired.)

Upright framing and headrails shall be of 1½-in. 18-gauge hollow drawn seamless tubing. The upright members shall be fluted to receive edges of partitions and panels. Rear edge of partitions, where attached to abutting wall shall be connected thereto by special adjustable connectors, designed to keep rear edge away from wall approximately ¾ in.

Backs for stalls (where utility space is indicated on the drawing) shall be made of single thickness 18-gauge steel. Vent tops shall be of 18-gauge steel. Vent doors at end of utility space (where same are indicated) shall be as specified above. (Specify locks if wanted.)

Finish

All parts shall be thoroughly cleaned and given a heavy prime coat and then finish coats of (gray or green) lacquer. All tubular framing shall be enameled both inside and outside.

Hardware and Fittings

Foot castings shall be of solid brass, 3 ins. high, and be self-draining and adjustabe, 4 in. door handle and inside latch knob and bolt shall be of solid brass. Coat hook shall be of solid brass, bumper type, with rubber insert. The 5-in. rubber door bumper shall be made of enameled steel, and shall be located at center of door. All brass hardware shall be nickel plated.

All Type T-12 partitions shall equal in every way, to the satisfaction of the architects, the material as manufactured by THE HART & HUTCHINSON COMPANY.

VENEER-STEEL HOSPITAL WARD SCREENS AND CUBICLES

Veneer-Steel screens and cubicles are of different construction than screens for ordinary purposes, being designed to especially meet the particular needs of hospital requirements.

They have, among many special features, a full flush design without horizontal ledges, and panels are assembled by a novel but secure locking strip, also flush with panels, and without screws or bolts. The usual ward screens, either solid steel or glass and steel, are attached to walls by special brackets keeping edge away from wall about ¾ in. for easier cleaning and general sanitation. Panels are sound deadened by fibre or wooden cores and all steel sheets are cemented to cores under pressure.

Where curtains are used a special Hart & Hutchinson curtain carrier is supplied using 1½-in. square tubing, slotted on underside, with special roller hooks running inside of tubing. Extra strength is allowed by this size tubing. Hardware is solid brass, chromium plated.

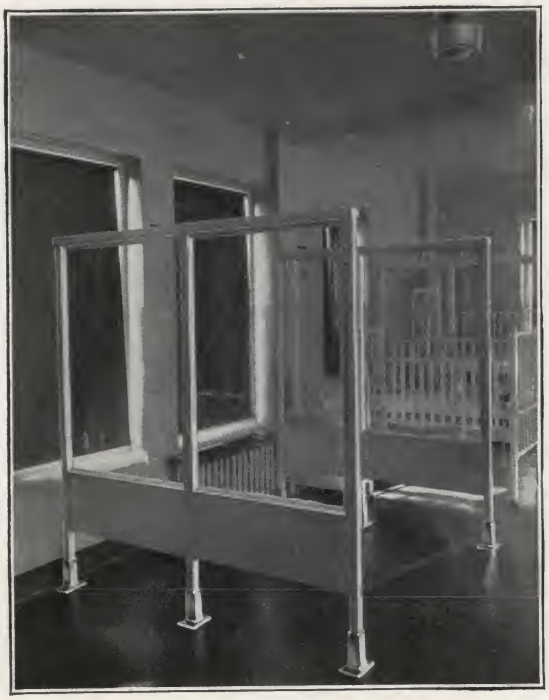


Standard Type V with Curtains

Features worth specifying for Veneer-Steel Hospital Wards, Screens or Partitions are the full flush design, both posts and panels being 1½ ins. thick, also the assembly of various panels using special locking seams without the use of bolts or screws. Usual ward screens have 3-in. high solid brass, chromium plated, adjustable shoes (6 ins. if free standing). Flush panels are made by cementing sheets of furniture steel to a wooden or fibre core and finished in baked prime coat with lacquer finish coats.

Standard size panels 24, 30, 36, 42, 48 and 54 ins. can be arranged to make various depth partition. Standard heights are 7 ft. over all, except for free standing screens which are 5 or 6 ft. high.

Other equipment for hospitals—such as lockers, shelving, X-ray viewing cabinets, special type partitions and special storage cabinets—are shown more fully in a special Hospital Catalogue which will be sent on request.



Free Standing Type W-M

For examination or special treatment booths Type W-O is recommended. Cut shows standard cornice height (7 ft.) partitions. Use of Veneer-Steel Partitions (1½ ins. thick) makes for a substantial saving in floor space over other makes of steel or tile partitions.

Where necessary to extend cubicles to ceiling Type W-O is used with glass panels from the cornice height to ceiling. Legs are omitted and 6-in. high bases can be had in stainless steel, brass or painted steel.

Standard panels permit easy regrouping or moving to new location, although when reassembled they are so stable as to be considered part of the building.



Type W-O, Either 7 Ft. High or Ceiling

FERROMETAL

Metal Doors, Partitions, Toilet Stalls, Shower Compartments, Dressing Rooms, Hospital Cubicles, Corridors, Utility Enclosures

MILWAUKEE STAMPING COMPANY

MILWAUKEE, WIS.

CHICAGO OFFICE, 150 No. Wacker Drive—Telephone Randolph 4227-8 NEW YORK OFFICE, 416 Broadway—Telephone, CAnal 6-1131

REPRESENTATIVES

Alabama
BIRMINGHAM, Thomas Supply Co., 238 Brown-Marx Building
MOBILE, Nachary Bldrs. Sup., 111 No. Royal

Arizona
PHOENIX, A. C. Thomas, 722 Luhrs Building

Arkansas
LITTLE ROCK, Chas. S. Watts

California
LOS ANGELES, Bradfield Bldg. Prod., 4814 Loma Vista Avenue
SAN FRANCISCO, Forderer Cornice Works, 16th & Potrero Avenue
SANTA BARBARA, Ott Hardware Co.

Colorado
DENVER, Rocky Mt. Arch. & Bldrs. Service, California Bldg.

Connecticut
HARTFORD, The Bidwell Hdwe. Co.

District of Columbia
WASHINGTON, Robert McWhirter, 1920 S Street, N. W.

Florida
JACKSONVILLE, Geo. P. Coyle, 1023 Lark Street
MIAMI, Pacific Lbr. & Sup. Inc., 1501 N. W. 1st Avenue
TAMPA, A. B. Zierleyn, 1807 Lisbon Avenue

Georgia
ATLANTA, Thomas G. Perry, 62 Bartow Street
AUGUSTA, Bowen Bros. Hdwe.
MACON, Taylor Iron Works, Broadway & Oglethorpe
SAVANNAH, J. H. Persse

Illinois
BLOOMINGTON, Herkless-Bollman Co.
CHICAGO, Milwaukee Stamping Co., 150 No. Wacker Drive
DECATUR, Moorehouse & Wells Co.
MOLINE, Beder-Wood's Sons
PEORIA, Roland Oliver, 1206 Lehman Building
QUINCY, Metzger Bldr. Sup. Co., 1018 Broadway
ROCKFORD, Capital Orna. Iron Works
SPRINGFIELD, Peter Vredenburgh Lbr. Co., 3rd & Jefferson Streets

Indiana
EVANSVILLE, G. L. Mesker & Co.
FORT WAYNE, Don E. White, 225 Cooper Building
HAMMOND, McLaughlin Mill Sup., 274 Michigan Avenue
INDIANAPOLIS, Stackhouse Bldg. Spec. Co., 501 New City Trust Building
LA PORTE, Decker Bros., 908 Lincoln Way
LOGANSPORT, Flanegin Hdwe. Co.
SOUTH BEND, South Bend Bldg. Spec. Co., 232½ Michigan Street

Iowa
DAVENPORT, Beder-Wood's Sons, Moline, Ill.
DES MOINES, Hansen Metalcraft Co., Box 270
MASON CITY, Mason Bldrs. Sup., 221 7th Street, N. E.
SIOUX CITY, Otto F. Bridge, 504 Jackson Street
WATERLOO, E. A. Pickworth Co., Pioneer Bank Building

Kansas
HUTCHINSON, Hutchinson Fdy. & Steel Co.
SALINA, Lee Hdwe. Co.
TOPEKA, Topeka Fdy. & Iron Wks. Co., 300 Jackson Street
WICHITA, Grabendike Engr. Sales Co., P. O. Box 481

Kentucky
LOUISVILLE, Kentucky Iron Works, 521 So. 2nd St.

Louisiana
NEW ORLEANS, Nachary Bldrs. Sup. Co., 318 Carondelet Street

Maryland
BALTIMORE, E. W. Kemp, 333 St. Paul Place

Massachusetts
BOSTON, Continental Bldg. Sup., 77 Summer Street
LONGMEADOW, John Driscoll, 71 South Park Avenue

Michigan
BATTLE CREEK, Battle Creek Lbr. Co.
DETROIT, Metallic Door & Spec. Co., 439 Penobscot Building
GRAND RAPIDS, Lincoln Brick Co., 336 Houseman Building
JACKSON, Mississippi Steel & Iron Co., Inc., High Street
LANSING, Lansing Steel Corp.
SAGINAW, Koehler Bros.

Minnesota
DULUTH, H. D. Bullard, 410 Builders Building
MINNEAPOLIS, Geo. T. Warner, 1406 Washington Avenue, So.

Mississippi
JACKSON, Mississippi Steel & Iron Co., Inc., High Street

Missouri
JOPLIN, Joplin Cement Co.
KANSAS CITY, Building Spec. Inc., 924 Baltimore Avenue

Missouri—*(Continued)*
ST. JOSEPH, Seaman-Schuske Metal Wks., 1611 Frederick Street
ST. LOUIS, F. A. Cammann Bldrs. Service, Suite 927 Century Building
SPRINGFIELD, Kelly Coal & Material Co., 550 No. Jefferson

Montana
BOZEMAN, F. I. Powers

Nebraska
HASTINGS, Polenske Bros. & Shellack Co.
LINCOLN, Paul O. Wells, P. O. Box 1210
OMAHA, Lumberman's Brick & Sup. Co., 1214 Farnam Street

New Mexico
Albuquerque, A. C. Weigerding, P. O. Box 173

New York
ALBANY, W. Howard Spelman, 311 Manning Boulevard
BUFFALO, W. D. Shumway, 455 Crescent Avenue
KINGSTON, Aird-Don Co., 74 Ten Broeck Street
NEW YORK, Milwaukee Stamping Co., 416 Broadway
ROCHESTER, S. A. Spencer, Builders Exchange, 135 Spring Street
SYRACUSE, R. J. Geary, 810 Danforth Street
UTICA, Utica Structural Steel Corp., 2104 Dwyer Avenue

North Carolina
Charlotte, A. L. Simpson, 1318 Romany Road

North Dakota
Write Geo. T. Warner, 1406 Washington Avenue So., Minneapolis, Minn.

Ohio
AKRON, Fred L. Crisp, Inc., 710 No. Main Street
CINCINNATI, Al. Levinson Co., 607 American Druggists Building
CLEVELAND, J. B. Olmstead Co. 218 Union Building
COLUMBUS, A. G. Peterson, 243 High Street
DAYTON, Dayton Bldrs. Sup., 104 So. Wayne Avenue
LIMA, H. V. Freeman, Opera House Building
TOLEDO, Hausman Steel Co.
YOUNGSTOWN, G. A. Doeright, Jr., 355 E. Wood
ZANESVILLE, Wise Fdry. Mach. & Sup. Co., 269 No. 6th Street

Oklahoma
OKLAHOMA CITY, J. B. Klein Iron & Fdy. Co.
TULSA, J. B. Klein Iron & Fdy. Co.

Pennsylvania
ALTOONA, Altoona Pipe & Sup. Co., 2111 Beale Avenue
ERIE, Erie Concrete & Steel Sup. Co., 1301 Cranberry
PHILADELPHIA, Parent Metal Prod. Co. Ltd., 338 Lawrence Street
PITTSBURGH, Frank Limbach, 1722 E. Ohio Street
READING, Earle Hardware Co.
SCRANTON, LaBar-Evans & Allen Co., 805 Board of Trade Building
WILLIAMSPORT, W. R. Huntington, 415 Woodland Avenue

South Carolina
CHARLESTON, Carolina Portland Cement
COLUMBIA, C. W. Turner, P. O. Box 536

South Dakota
Write Geo. T. Warner, 1406 Washington Avenue So., Minneapolis, Minn.

Tennessee
CHATTANOOGA, Standard Iron & Wire Wks.
KNOXVILLE, Chandler & Co.
MEMPHIS, Wittichen Lime & Cement Co., 1477 Lamar Avenue
NASHVILLE, Englert Eng. Co., 120 3rd Avenue, No.

Texas
ABILENE, Abilene Brick Co., P. O. Box 241
AMARILLO, W. A. Fowler, 223 W. 7th Street
DALLAS, J. L. O'Hearn Co., 1913 No. Harwood
EL PASO, Neff-Stiles Co.
HOUSTON, Bayer-Voightlander Co., 1112 Wood Street
SAN ANTONIO, J. L. O'Hearn Co., 904 Builders Exchange Building

Utah
SALT LAKE CITY, Steel Engineers Co., 1526 S. W. Temple

Virginia
NORFOLK, Standard Iron Works, 1836 Church Street
RICHMOND, Earnest Bros., Inc., 805 E. Franklin Street
ROANOKE, Roanoke Bldrs. Sup. Co., 11 Franklin Road, S. W.

Washington
SEATTLE, S. W. R. Dally, 332 Pioneer Building

West Virginia
BLUEFIELD, Central Sales & Purch. Co., 506 L. & C. Building
CHARLESTON, Fireproof Prod. Co., 216 Professional Building
WHEELING, Kennedy Hardware Co., 1018 Market Street

Wisconsin
GREEN BAY, Northern Metal & Roofing Co., 422-424 So. Pearl Street
MILWAUKEE, Millies Bldg. Spec. Co., 782 No. Jackson Street

FERROMETAL

METAL COMPARTMENTS

For our pages on Hinges and Shower Compartments, see Manufacturers' Index

FERROMETAL FLUSH AND PANEL TYPE METAL DOORS

For Use with Marble

Adaptability

Both the flush and panel type Ferrometal doors are designed to meet the requirements of present architectural designs and are used to advantage with marble, alberene stone, vitrolite, slate or glass partitions, for toilet compartments, dressing rooms, shower rooms, utility corridors, janitor closets, etc.

Construction

Ferrometal flush type doors are unusually strong due to heavy 16-gauge concealed moulding used to bind sheets together and hold them firmly in place. Mouldings are inserted under pressure, insuring an unusually tight and rigid construction.

Panel type door with full sized 3½-in. stile and wood core are so constructed as to make a practically noiseless door. The wood stile does away entirely with hollow sound common where unfilled stiles are used, and insures resiliency.

Color and Finish

Ferrometal doors can be furnished in either a prime finish, French Grey enamel, Olive Green enamel, or either color in Ripple enamel. All finishes baked on at high temperature insuring a lasting finish. Other finishes and colors can be furnished to harmonize with color schemes in rooms in which they are to be used. When any special color is to be matched it is necessary to furnish sample of color desired.

Hardware

All Ferrometal doors are equipped with the nationally known Lawson-Milwaukee lavatory hardware. At the right on this page is shown the gravity type Lawson-Milwaukee pivot hinge and other hardware which is standard on Ferrometal doors, and furnished in nickel or chromium finish as specified. Spring type pivot hinges furnished if specified. Different types of hardware which can be used with Ferrometal doors are shown on pages C368 and C369 of this edition, SWEET'S ARCHITECTURAL CATALOGUES.

Sanitary

These unsually strong Ferrometal panel and flush type metal doors are all of sanitary construction, insuring ease of cleaning and upkeep. This same ease of cleaning is found in the brass hardware, furnished in a smooth (nickel or chromium plated finish).

Architect's Specifications

All lavatory doors shall be Ferrometal (flush) (panel) type with Lawson-Milwaukee hardware as manufactured by MILWAUKEE STAMPING COMPANY, Milwaukee, Wis.

Flush doors shall be Ferrometal flush type, $\frac{13}{16}$ in. thick, with two layers of fibreboard filler pressed together, glued, bound and sealed between two boxed sheets of lead-coated steel (aluminum) with vertical inside wood stile for hardware connections.

Panel doors shall be Ferrometal panel type doors, $\frac{13}{16}$ in. thick, with 3½-in. stiles of lead-coated copper-bearing steel (aluminum), with overlapping double thickness, countersunk miters and kiln-dried wood core ¾ in. thick. Inner edge of door stiles to be sanitary shape and interlocked 1 in. with panel of lead-coated copper-bearing steel (aluminum).

FERROMETAL

METAL COMPARTMENTS



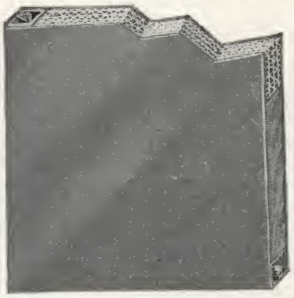
Panel Door



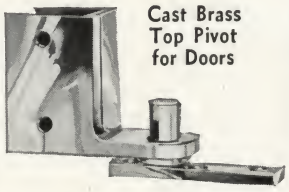
Flush Door



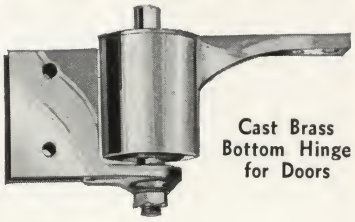
Panel Door Construction Detail



Flush Door Construction Detail



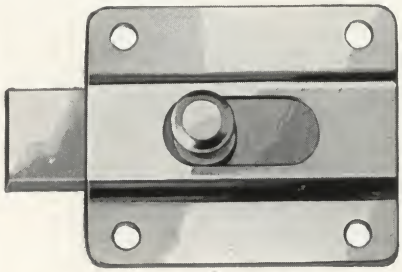
Cast Brass Top Pivot for Doors



Cast Brass Bottom Hinge for Doors

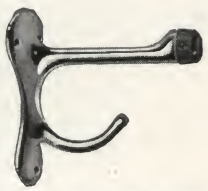


No. 1968 Cast Brass Handle for Door Swinging Out



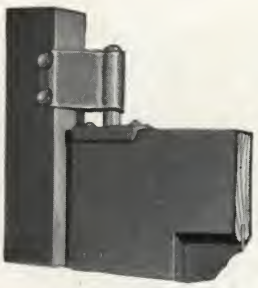
No. 803 Solid Brass Bolt

Specify No. 1848 strike for doors opening in. Specify No. 1849 strike for doors opening out



No. 1983 Cast Brass Hooks with Bumper

FERROMETAL PANEL TYPE PARTITIONS



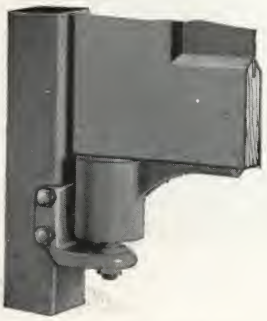
Top Pivot of Door



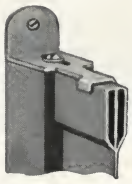
Post and Foot Fitting



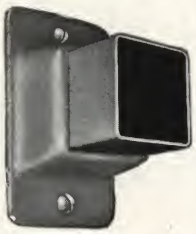
Panel Construction Detail



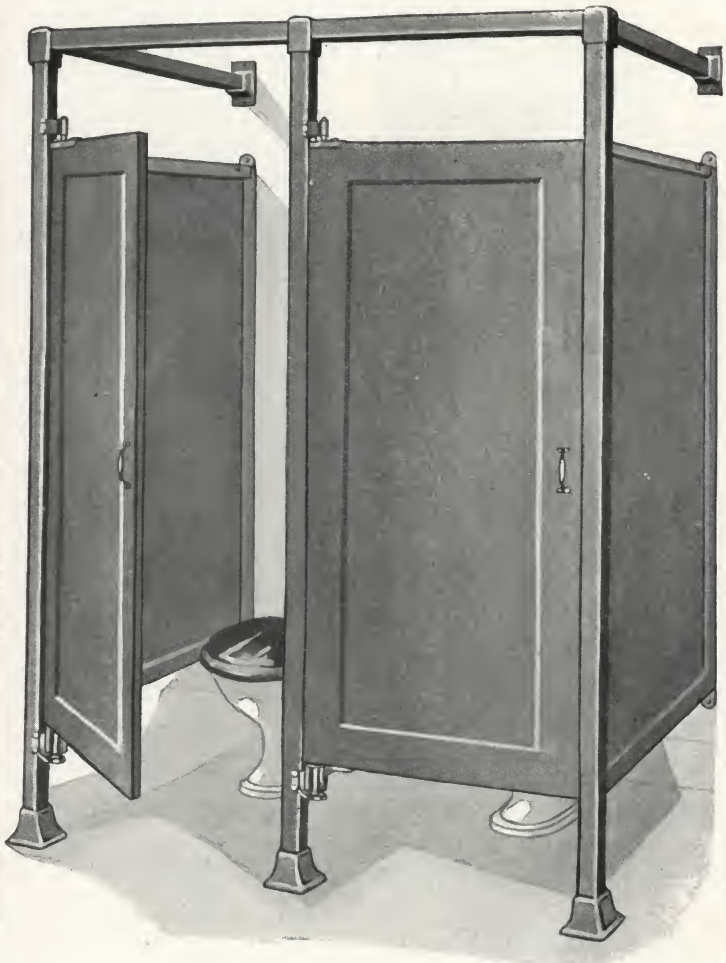
Bottom Hinge of Door



Wall Fitting for Panel



Wall Fitting for Headrail



Features of Construction of the Ferrometal Panel Type Partitions and Doors

Toilet Partitions

Ferrometal panel type partitions in the toilet rooms have for many years played an essential part in the modern health program. In schools they help protect the health of students by making possible clean, fine, wholesome toilet room facilities. There are no places for germs and contamination to hide and spread. Washing and cleaning is done quickly, easily and thoroughly.

Construction

Ferrometal panel type construction is unusually rigid due to heavy gauge sheets used in panels and extra large 1¾-in. square posts and headrail. While strength is an essential of toilet partitions, appearance has been given careful thought and Ferrometal design is pleasing to the eye.

Steel or Aluminum

Ferrometal partitions are made of first quality copper bearing stretcher level steel or a special Alcoa aluminum alloy.

Cost, etc.

Ferrometal panel type partitions are reasonable in cost and fit all requirements of economy. Ferrometal panel type partitions provide attractive appearance at moderate cost for both new and old, large and small buildings. Installations are made quickly and quietly by experienced mechanics.

Send us a simple diagram of toilet room space available and we will recommend proper layout of stalls, suggest sizes and styles and estimated cost.

Architect's Specification

All toilet stalls, dressing rooms and other compartments, etc., shown on the plans, shall be Ferrometal panel type partitions, doors, etc. All sizes as shown on plans, or as hereinafter specified as manufactured by the Milwaukee Stamping Company, Milwaukee, Wis.

Material—Material in partitions to be copper-bearing steel, full pickled, three pass, cold rolled and patent leveled.

Partitions to be solid panel construction of No. 16 gauge material with No. 16 gauge 1¾ in. hollow metal front and rear posts of square shape with sanitary shape top and bottom, hollow metal rails of No. 16 gauge with partition sheet interlocked into four sides and securely welded. All joints to be sanitary and homogeneous. All posts and headrails to be of heavy No. 16 gauge steel with 1¾ in. square with sanitary shape edges. Furnish adjustable heavy drawn foot fittings of rust-proof steel, finished to match partition (foot fittings can be furnished in brass or aluminum if desired). See page C532 for standard sizes.

Doors—Doors to be $\frac{13}{16}$ in. thick with 3½ in. stiles of No. 24 gauge lead-coated copper-bearing steel, with overlapping double thickness countersunk miters and kiln dried wood core $\frac{13}{16}$ in. thick with two ½x6 in. dowel pins at each corner. Inner edge of door stiles to be sanitary shape and interlocked 1 in. with panel of lead-coated copper-bearing steel.

Hardware—Doors are to be provided with Lawson Milwaukee Universal self-closing gravity hinges (which allow for adjustment to any desired position, open or closed). Furnish heavy nickel-plated brass slide door bolt and door pull. The hinge, hinge bracket, top door pivots, coat hooks, bumpers and strikes to be furnished in the same finish as partitions and doors.

Finish—(a) All material to be furnished in gray prime, final finishing to be done after installation. (See Painting Specifications.) (b) All material to be furnished in gray (or green) enamel (as specified by architect).

Special finishes furnished when desired.

FERROMETAL

METAL COMPARTMENTS

FERROMETAL FLUSH TYPE PARTITIONS

Adapted to Many Uses

Ferrometal flush type partitions offer the highest quality partitions obtainable, and at a reasonable cost. They have a wide range of usefulness for many kinds of installations such as: Dressing Rooms, Storage Rooms, Utility Corridors, and Janitors' Closets.

Quiet Construction

Ferrometal flush type partitions with their rigid, non-vibrating—soundproof construction, and sanitary design are essentially a part of the modern building program, and permit the utilization of space to the highest degree, harmonizing with the finest architectural plans.

Reasonable in Cost

Ferrometal flush type partitions can be purchased and installed for much less than either marble or slate, and with reasonable care will last the lifetime of the building.

Sanitary in Design

The sanitary construction of Ferrometal flush type partitions does away with all unnecessary moulding, paneling, corners and crevices insuring ease of cleaning and upkeep. All fittings are heavy drawn steel with rounded edges (no sharp edged brittle castings are used).

Unusually Strong

Foot fittings of heavy drawn rustproofed steel, brass or aluminum are adjustable. Posts and head rail are unusually heavy 16 gauge, 1¾ in. square tubing.

Also Built in Aluminum

Ferrometal flush type partitions in aluminum offer the highest quality of flush partitions desired. The design is standard Ferrometal flush type except all metal parts are made of a special alloy of alcoa aluminum.

Architects' Specifications

All toilet stalls, dressing rooms and other compartments, etc., shown on the plans shall be Ferrometal flush type partitions, doors, etc., of sizes as shown on plans or as hereinafter specified as manufactured by the MILWAUKEE STAMPING COMPANY, Milwaukee, Wisconsin.

Material—Partitions to be 1⅜ in. thick and each partition to be made of two sheets of No. 22 gauge pickled, cold rolled, copper bearing, stretcher leveled furniture steel. The partitions shall be insulated with corrugated fibre board core, cemented together combining sheets and filler in one solid mass. A heavy steel moulding to be inserted on the inside along each edge to interlock the metal sheets. To assure proper adhesion between filler and sheets, partitions and doors shall be placed in a press subject to high pressure until set. All posts and head rails to be of heavy 16 gauge steel tubing 1¾ in. square with sanitary shaped edges. Furnish adjustable self-draining foot fittings of rust-proofed steel, finished to match partition. (Foot fittings can be furnished in brass, or aluminum if desired.)

See following page for standard sizes.

Doors—Doors shall be of the same material and thickness as partitions, except they shall have kiln dried white pine wood stiles both front and rear for the attachment of hardware.

Hardware—Doors are to be provided with Lawson Milwaukee Universal self-closing gravity hinges (which allow for adjustment to any desired position, open or closed). Furnish heavy nickel-plated brass slide door bolt and door pull. The hinge, hinge bracket, top door pivots, coat hooks, bumpers and strikes to be furnished in the same finish as partitions and doors.

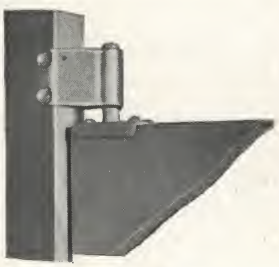
Finish—(A) All material to be furnished in gray prime, final finishing to be done after installation. (See Painting Specifications.)

(B) All material to be furnished in gray (or green) enamel (as specified by architect).

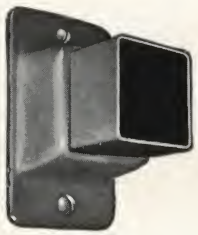
Special finishes furnished when desired.

FERROMETAL

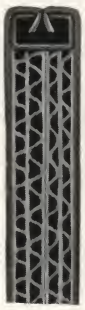
METAL COMPARTMENTS



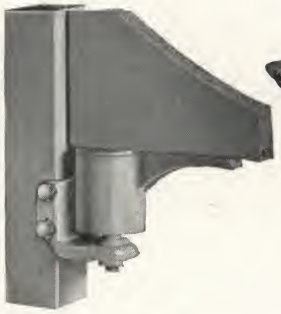
Top Pivot of Door



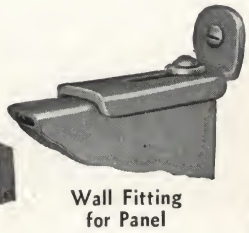
Wall Fitting for Headrail



Panel Construction Detail



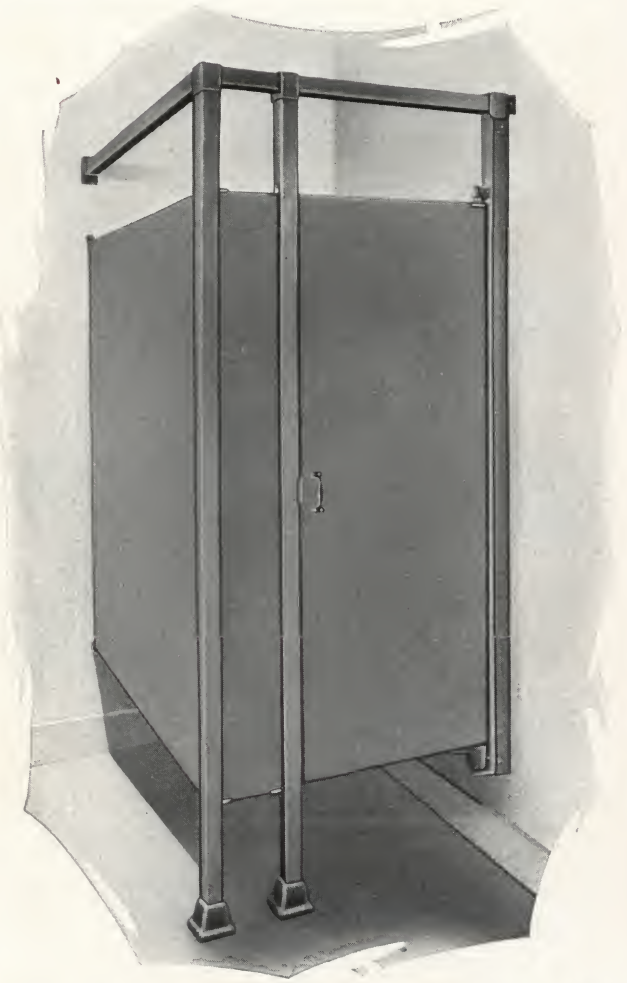
Bottom Hinge of Door



Wall Fitting for Panel



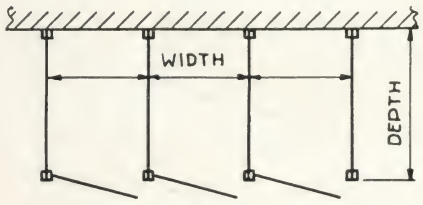
Post and Foot Fitting



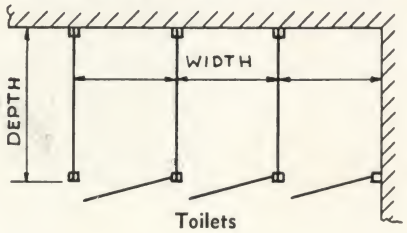
Features of Construction of the Ferrometal Flush Partition and Doors

FERROMETAL

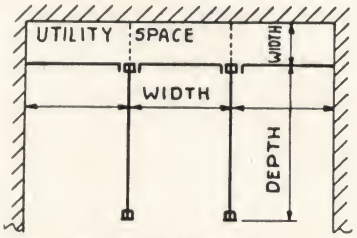
TYPICAL TOILET INSTALLATIONS



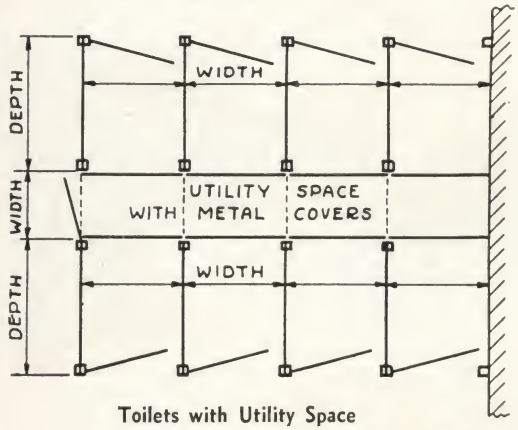
Toilets



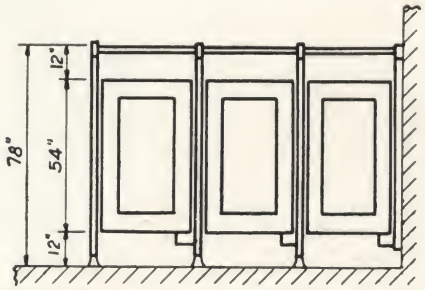
Toilets



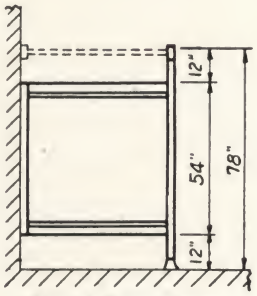
Toilets with Utility Space



Toilets with Utility Space

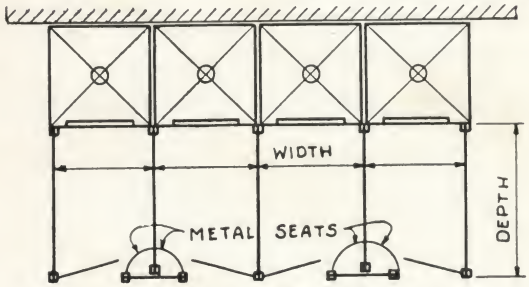


Typical Front Elevation of Toilets with Doors

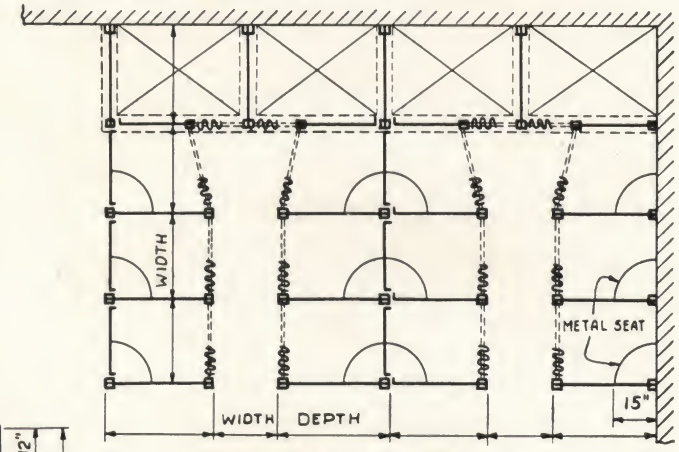


Typical Toilet Panel

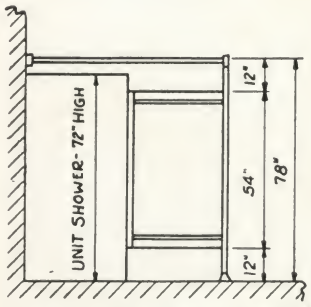
TYPICAL SHOWER AND DRESSING ROOM INSTALLATIONS



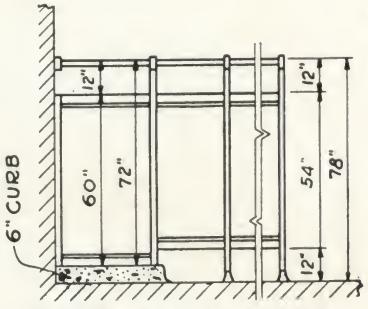
Unit Showers with Dressing Rooms



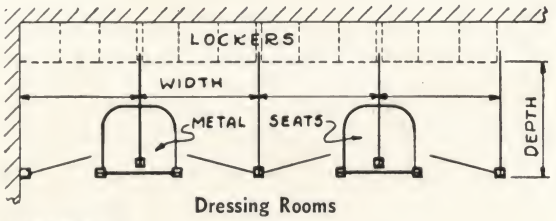
Showers with Dressing Rooms



End of Unit Shower with Dressing Room



End of Shower and Dressing Room



Dressing Rooms

SIMPLIFIED PRACTICE RECOMMENDATIONS

The United States Bureau of Standards recommends the following standard size partitions and doors be used wherever possible. Doors the full width of the stall help reduce the cost. Doors swinging in are recommended to eliminate chance of injury through abrupt opening, and keep floor space in wash room clear.

For Schools					
Center to center of partitions or fixtures	Width of doors	Depth of partition	Will clear fixture projecting	Height of partition	Height to top of headrail
30″	28″	54″	29 ″	54″	78″
32″	30″	54″	27 ″	54″	78″
34″	32″	54″	25½″	54″	78″
Other Type of Buildings					
30″	28″	60″	35 ″	60″	84″
32″	30″	60″	33 ″	60″	84″
34″	32″	60″	31½″	60″	84″

HENRY WEIS MANUFACTURING CO., INC.

FACTORY AND GENERAL OFFICES

ELKHART, IND.

For Shower Cabinet Division Products and Representatives, see Manufacturers' Index

SALES REPRESENTATIVES

ALABAMA
Birmingham: C. S. Caldwell, 1914 First Avenue
Mobile: Reliance Equipment Co., 9-11 Water Street
ARIZONA
Phoenix: Walter Dubree, P. O. Box 145
ARKANSAS
Little Rock: Clippard Builders Specialties Co., 120 W. Markham Street
CALIFORNIA
Los Angeles: J. E. Dwan, Inc., 616 So. Anderson Street
San Diego: San Diego Building Specialties, Inc., 629 W. G Street
San Francisco: Dwan & Company, Call Building
COLORADO
Denver: R. T. MacCracken Co., 1800 E. 46th Avenue
CONNECTICUT
Hartford: Laurence R. Smith & Co., 75 Pearl Street
New Haven: A. R. Kirschner Co., 30 Whitney Avenue
DELAWARE
Wilmington: J. Francis Blaine, Inc., 25th and Broome Streets
DISTRICT OF COLUMBIA
WASHINGTON: Lally-Rohlader Co., Inc., 1756 M Street, N. W.
FLORIDA
Jacksonville: Dawkins Building Supply Co., Box 2153
Miami: Frank R. Allen, c/o Dixie Novelty Works, Inc., N. W. 21st Street, Miami Court (Telegrams); Mail to P. O. Box 1683, Buena Vista Station
Tampa: Stovall & Archer, 1001 Peninsular Telephone Building
GEORGIA
Atlanta: Industrial Equipment Co., 92 Fairlie Street
Augusta: W. E. Raines, S. F. C. Building
ILLINOIS
Aurora: Davidson-Pearsall Co., 227 Main Street
Chicago: Henry Weis Manufacturing Co., Inc., 228 No. La Salle Street
Decatur: Gandy & Earp, 440 So. Franklin Street
Peoria: Samuel J. Smith & Co., 510 Lehmann Building
Quincy: E. Best Plumbing & Heating Supply Co., 628 Jersey Street
Rockford: Central Iron Works, 1143 Selden Street
INDIANA
Evansville: J. C. Vaught, 712 So. Norman Avenue
Fort Wayne: Carl H. Penningroth, 1617 Curdes Avenue
Gary: W. R. Baker Co., 341 McKinley Street
Indianapolis: Hoover Brothers Co., 1008 Majestic Building
IOWA
Burlington: C. D. Barngrover, 721 So. Seventh Street
Davenport: Cement Products Co., 715 E. River Street
Des Moines: Hawkeye Engineering Co., 301 Hubbell Building
Sioux City: H. C. McNeil & Son, 308 Jackson Street
KANSAS
Wichita: C. L. Anderson, P. O. Box 1143
KENTUCKY
Lexington: Clay-Ingels Co., 347 Main Street
Louisville: R. B. Tyler Co., 1448 Levering Street
Paducah: The Paducah Iron Co., 216 So. First Street
LOUISIANA
New Orleans: J. R. Quaid, 808 Perdido Street
Shreveport: Welsh Building Specialties, Inc., 310 Ricou-Brewster Building
MAINE
Portland: William S. Wade, 158 Walnut Street, South Portland
MARYLAND
Baltimore: C. A. Weiller, 617 Lexington Building
Cumberland: Grant Lumber & Supply Co., 205 Williams Street
MASSACHUSETTS
Boston: Construction Supply Co., 6 Park Street
MICHIGAN
Detroit: Acme Wire & Iron Works, 12340 Cloverdale Avenue
Grand Rapids: S. A. Morman & Co., Perkins Building
Lansing: James E. Payne, 410 W. Saginaw Street, Box 293
Menominee: Ben B. Holmes Co.
MINNESOTA
Duluth: Dunlop-Moore Co., 22 Third Avenue, West
St. Paul: Builders Engineering Co., 2694 University Avenue
MISSISSIPPI
Jackson: Fred Thrasher, 407 Tower Building
MISSOURI
Kansas City: C. S. Hawley Co., 916 Wyandotte Street
St. Joseph: Mannan-Smith Supply Co., Station A
St. Louis: Lasar Manufacturing Co., 1313 No. 16th Street
MONTANA
Helena: Raymond C. Grant
NEBRASKA
OMAHA: Consolidated Builders Supply Co., 1818 Harney Street
NEW YORK
Binghamton: Babcock, Hinds & Underwood
Buffalo: Hercules Waterproof Cement Co., 519 Jackson Building
New York: Philadelphia Fire Retardant Co., Inc., 110 W. 34th Street
Rochester: Robert C. Troup Co., Room 207, 154 East Avenue
Schenectady: Fireproof Materials, Inc., P. O. Box 937
Syracuse: B. R. Johnson, 145 Harding Place
Utica: American Hard Wall Plaster Co.
NORTH CAROLINA
Asheville: J. A. Thompson, 8 Richards Street, Kenilworth
Charlotte: Edwin C. Boyette, Jr., Box 627, 134 Brevard Court
Greensboro: J. D. Wilkins, W. Lee Street at Glenwood Avenue
Raleigh: Engineering & Sales Co., P. O. Box 58
NORTH DAKOTA
Fargo: Clay-Products & Material Co., Inc., 519 Second Avenue, No.
OHIO
Akron: O. G. Knoske, 31 No. Summit Street
Canton: Earl H. Paar Co., 715 Roslyn Avenue, S. W.
Cincinnati: T. A. Thauwald, Inc., 104 W. Pearl Street
Cleveland: J. W. Rommel, 900 Keith Building
Columbus: H. H. Leukart, 297 So. High Street
Dayton: Callahan-Harris, Inc., 204 Harries Building
Toledo: Anderson & Krapp, 916 Summit Street
OKLAHOMA
Oklahoma City: H. C. Geatches, P. O. Box 223
Tulsa: Murray R. Womble & Co., 121 W. Eighth Street
OREGON
Portland: Cress & Company, 699 Pettygrove Street
PENNSYLVANIA
Allentown: G. K. Halteman & Co., Allen and St. Cloud Streets
Erie: Geo. H. Kraft & Son, 405 Scott Building
Harrisburg: Chas. J. Bushong, 305 Forster Street
Philadelphia: Philadelphia Fire Retardant Co., Inc., 1321 Arch Street
Pittsburgh: James R. Pitcairn, 1052 Century Building
Reading: Daniel F. Yost, 1234 Dauphin Avenue, Wyomissing
Scranton: Nor-East Sales Co., 417 Scranton Electric Building
Williamsport: W. T. Ebur Co., 155 W. Third Street
SOUTH CAROLINA
Columbia: Shand Engineering & Sales Co., Room 705-13 Lady Street
Greenville: J. Mac. Rabb, News Building
TENNESSEE
Chattanooga: Stephens Builders Supply Co., Box 84 St. Elmo Station; (Telegrams) Provident Building
Knoxville: Chas. M. Allen Co., 712 So. Gay Street
Memphis: Miller-Cochran Co., 912 Exchange Building
Nashville: Geo. W. Ruth & Co., 151 Fourth Avenue, No.
TEXAS
Abilene: West Texas Builders Supply Co., 757 No. Second Street
Amarillo: Borger-McCormick Brick Co., 119 W. 6th Street
Dallas: Gilbert Manufacturing Co., 510-11 Marvin Building
El Paso: C. C. Gaines, First National Bank Building
Houston: Walcott, Maisey & Paige, 536-538 West Building
San Antonio: Jno. A. Williamson Co., 804 Avenue A
UTAH
Salt Lake City: Hawley-Richardson-Williams Co., 204 Dooly Building
VIRGINIA
Norfolk: Hall-Hodges Co., 809 Citizens Bank Building
Richmond: L. C. Tolson Co., 312 Builders Exchange
Roanoke: Stone-Tile & Supply Co., Inc., Cleveland Avenue and 17th Street
WASHINGTON
Seattle: Western Building Specialty Co., 2307 Fifth Avenue
Spokane: H. G. Lanahan & Co., 310 W. 20th Street
WEST VIRGINIA
Charleston: Standard Brick & Supply Co., 813 Kanawha Street
WISCONSIN
Madison: R. L. Haskin, c/o Wiedenbeck, Dobelin Co., 619 W. Mifflin Street
Milwaukee: Jackson & Fahey Co., 1311 Majestic Building

Products—Metal Compartment Division

WEISALLOY (Aluminum Alloy) TOILET, SHOWER and DRESSING ROOM COMPARTMENTS (Panel Shower Compartments, Panel or Flush Dressing Room and Toilet Compartments).

WEISTEEL TOILET, SHOWER and DRESSING ROOM COMPARTMENTS, furnished in Standard Flush, Standard Panel, and Type C Panel Construction.

WEISTEEL HOSPITAL CUBICLES for wards and waiting rooms.

WEIS METALUNITS (Flush Custom-built Doors of rustless alloys, aluminum alloy, or prime furniture steel, with hardware), and stock WEISTEEL DOORS (of aluminum alloy or furniture steel, with hardware), for W. C. stall partitions of marble, glass, slate, Vitrolite, Alberene stone, terrazzo, etc.

The Company

HENRY WEIS MANUFACTURING CO., INC. was founded in 1876. They originated metal toilet, shower and dressing room compartments. They have continuously contributed to the industry outstanding improvements in design and construction. Their products have always been known for quality materials and workmanship.

The Company enjoys a high rating in Dun's, and a carefully guarded reputation for responsibility and dependability in the architectural profession and building trades.

Manufacturing Facilities

More than 60,000 sq. ft. of expertly planned floor space in a new and modern factory provide volume of quality production at economical cost.

WEISALLOY (ALUMINUM ALLOY) COMPARTMENTS

Rustproof Compartments with All the Advantages of Weis Panel or Flush Construction

PANEL AND FLUSH

WEISALLOY

WEISALLOY (Aluminum Alloy) Partitions and Doors are now in their third year of general use by architects and builders. For eight years prior to their public introduction to architects, WEISALLOY was actually tested in buildings selected by reason of variations in climatic and general service conditions. Since WEISALLOY has been available, it has met with enthusiastic response, as indicated by specifications for and installations in representative buildings throughout the country. (Names of installations upon request.)

WEISALLOY is a tested product and is guaranteed by a manufacturer who for fifty-seven years has been engaged in the making of metal building products.

WEISALLOY panel and flush designs have been fully developed—the alloys, gauges, tempers and finishes of all raw materials have been selected by tests; production methods have been developed and perfected and, equally important, a corps of workers has been thoroughly trained in the fabrication of finished products from these raw materials, which have working characteristics totally different from steel.

For shower stall enclosures, Panel WEISALLOY only is recommended. For dressing rooms and toilet stalls, either Panel or Flush WEISALLOY is satisfactory. (See explanatory notes at the bottom of page.)

Advantages of Weisalloy

Rustproof—impervious to moisture or odors—pleasing appearance and sanitary construction—economical first cost and maintenance expense—minimum installation time—all parts and fittings made of aluminum alloy (Weis designs particularly adapted to aluminum alloy construction). Not an experiment but a guaranteed product.

Architect's Specifications

Note: If desirable, standard panel or flush WEISTEEL *Dressing Rooms may be assembled with panel* WEISALLOY *Shower Stalls.*

Panel Weisalloy

All Shower, Dressing Room and Toilet Compartments noted in this specification shall be Panel WEISALLOY, as manufactured by the HENRY WEIS MANUFACTURING CO., INC., Elkhart, Indiana.

Partitions—Partitions (backs, utility end plates and covers), to be built of not less than 14 B&S gauge aluminum alloy. Posts and headrail 12 B&S gauge aluminum alloy. All partition panels to have sanitary V-shaped moulding at top and bottom formed of the same sheet, which shall be interlocked and welded into the post. Furnish necessary aluminum alloy wall and top post fittings and smooth finish, Government formula, nickel alloy foot castings, all to be adjustable to take up any variation in walls and floors.

Doors—Doors, where shown on plans, are to have 3-in. stiles and rails, with sanitary cove moulding, and panels of 16 B&S gauge aluminum alloy. The mitres of stiles and rails shall be reinforced and welded by the WEISALLOY process and finished flush.

Hardware—Hardware to be Panel WEISALLOY standard, consisting of a Universal Gravity Hinge, Heavy Slide Bar Latch, Pull and Coat Hook. All parts to be brass, nickel plated.

Finish—All material shall be thoroughly cleaned and given a coat of gray or red oxide metal primer.

(1) Finish painting to be done after installation. (See painting specifications.)

(2) All material to be finally finished at the factory with baked-on enamel, either sage green or light grey.

Specifically state, in specifications, method No. 1 or No. 2 for final finish. All shower partitions finished at factory with baked red oxide primer.

Flush Weisalloy

All Dressing Room and Toilet Compartments noted in this specification shall be Flush WEISALLOY, as manufactured by the HENRY WEIS MANUFACTURING CO., INC., Elkhart, Indiana.

Partitions—All partition panels shall be 1 in. thick. Each panel shall be made up of two sheets of 18 B&S gauge aluminum alloy. Before assembly, inner surfaces of these side members shall be given a bonding coat baked on at 350° F. They shall then be spaced and insulated with a laminated corrugated fiber-board filler, cemented to their inner surfaces. To assure uniform adhesion, all panels shall be subjected to a pressure of 500 lbs. per sq. ft. for 24 hours. Edges of panels shall be bound and interlocked, under tension, with drawn aluminum alloy moulding, which shall be welded at corners. All supporting posts shall be 12 B&S gauge aluminum alloy and welded to panels to provide an integral, rigid partition unit.

Backs against walls or used as enclosures for utility corridors shall be of 14 B&S gauge single sheet, flush panel construction. Vent tops, end plates and utility doors shall be of 14 B&S gauge single sheet construction.

Furnish necessary 12 B&S gauge aluminum alloy headrail and post fittings, also wall fittings, which shall be adjustable to take care of unevenness in walls. Include smooth finish, Government formula, nickel alloy foot castings, which are adjustable to take care of variations in floors.

Doors—Doors, where shown on plans, shall be 1 in. thick and of the same design and construction as specified for partition panels. Doors shall be guaranteed to be rigid and free from wind.

Hardware—Hardware to be flush WEISALLOY standard, consisting of a Universal Gravity Hinge, Heavy Slide Bar Latch, Pull and Coat Hook. All parts to be brass, nickel plated.

Finish—All material shall be thoroughly cleaned and given a coat of gray or red oxide metal primer.

(1) Finish painting to be done after installation. (See painting specifications.)

(2) All material to be finally finished at the factory with baked-on enamel, either sage green or light grey.

Specifically state, in specifications, method No. 1 or No. 2 for final finish.

Important

Flush construction for shower enclosures not recommended.

Reasons—(1) Partition panels cannot be uniformly or *permanently* sealed against shower water.

(2) Adaptable filler materials, while moisture resistant, are not waterproof.

(3) Water temperature changes are conducive to condensation inside flush panels; hence, only Panel WEISALLOY, single sheet construction, recommended for shower enclosures.

Flush compartments for toilet stalls and dressing rooms are not subject to the above service conditions to any appreciable degree.

Note: All alloys and tempers of alloys for various parts of the product are in accordance with manufacturers' adopted standards, as a result of experiments and tests which were checked with the engineering department of the Aluminum Company of America.

All WEISALLOY products are finished in prime coat or baked enamel at factory. (See finish specifications above.) Although these finishes are not required for the preservation of the aluminum alloy, they are recommended for appearance, as aluminum, with age and use, becomes unevenly darker in color.

For descriptions and illustrations of details of designs which are similar to Panel and Flush WEISTEEL, refer to following pages.

FLUSH WEISTEEL COMPARTMENTS



FLUSH

WEISTEEL

A few years ago a demand for flush type metal compartments became apparent. This demand resulted from two definite causes. First, two decades of use of high-grade metal compartments, such as Panel WEISTEEL, had demonstrated their advantages—sanitation, economy and durability. Second, the desire of architects and builders to have these benefits incorporated into a design which would also include those characteristics found in types of buildings where more expensive kinds of materials were generally used.

A design incorporating the materials and construction which would satisfy this demand presented many difficult problems. On their solution was concentrated the experience and facilities of the Weis organization. Flush WEISTEEL here illustrated and described is the result.

Important

Flush construction is not recommended for shower stall enclosures for the following reasons:

(1) Observation and tests indicate that no suitable flush panel construction can be uniformly and permanently sealed against shower water.

(2) Adaptable filler materials, while moisture-resistant, are not waterproof.

(3) Water temperature changes are conducive to condensation inside the flush panels.

Only single sheet panel construction is recommended for shower enclosures (see description Panel WEISALLOY on preceding page and Panel WEISTEEL on following page).

Construction Features

(1) Flush WEISTEEL is a combination of pleasing rectangular designs.

(2) Partitions and doors 1 in. thick. This thickness combines desired mass appearance with essential rigidity.

(3) Method of binding and interlocking, under tension, the panel side members with a rolled steel moulding is an exclusive Weis construction (see illustration).



Patented

(4) The above method of assembly provides permanent, uniform rigidity and strength along the entire length of edges of all partitions and doors.

(5) Each edge of partition or door is reinforced by three thicknesses of metal (see illustration).

(6) No exposed raw edges of metal.

(7) No open seams.

(8) All cross sections are true and uniform in profile.

Architect's Specifications

Toilet Stalls and Dressing Room Compartments, etc., noted in this specification shall be flush WEISTEEL as manufactured by the HENRY WEIS MANUFACTURING CO., INC., Elkhart, Indiana.

Partitions—All partition panels shall be 1 in. thick. Each panel less than 54 in. in width shall be made up of two sheets of 22-gauge furniture steel; each panel 54 in. and wider shall be made up of two sheets of 20-gauge furniture steel. Before assembly, inside surfaces of these side members shall be coated with an iron oxide primer baked on at 350° F. They shall then be spaced and insulated with a laminated corrugated fiber board filler, cemented to their inner surfaces. To assure uniform adhesion, all panels shall be subjected to a pressure of 500 lbs. per sq. ft., for 24 hours. Edges of panels shall be bound and interlocked, under tension, with drawn steel moulding, which shall be welded at corners. Supporting posts shall be interlocked and welded to panels to provide an integral, rigid partition unit.

All supporting posts and headrail bracing shall be 16-gauge rectangular steel tubing.

Backs against walls or used as enclosures for utility corridors shall be of 16-gauge single sheet panel construction. Vent tops, end plates and utility doors shall be of 16-gauge single sheet construction.

Furnish necessary headrail and post fittings, also wall fittings, which shall be adjustable to take care of unevenness in walls.

Include smooth finish, Government formula nickel alloy foot castings, which are adjustable to take care of variation in floors.

Doors—Doors, where shown on plans, shall be 1 in. thick, and of the same design and construction as specified above for partition panels. Doors shall be guaranteed to be rigid and free from wind.

Hardware—The hardware is to be flush WEISTEEL standard, consisting of a Universal Gravity Hinge, Heavy Slide Bar Latch, Pull and Coat Hook. All parts to be brass, nickel plated.

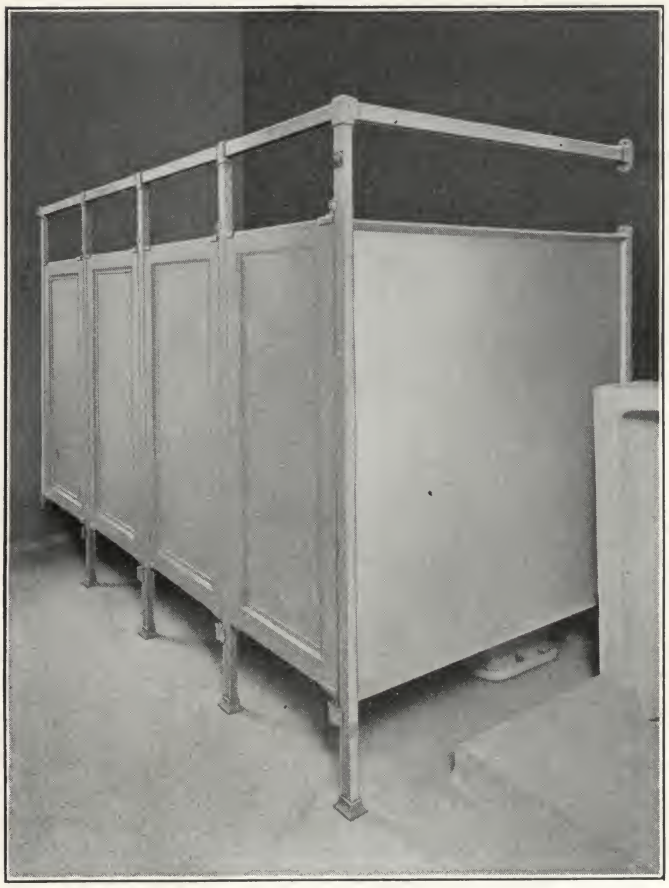
Finish—All material shall be thoroughly cleaned and given a heavy coat of gray or red oxide metal primer.

(1) Finish painting to be done after installation. (See painting specifications.)

(2) All material to be finally finished at factory with baked-on enamel, either sage green or light grey.

Specifically state, in specifications, method No. 1 or No. 2 for final finish.

PANEL WEISTEEL COMPARTMENTS



Architect's Specifications

All Toilet Stalls, Shower and Dressing Room Compartments, Partitions, etc., noted in this specification shall be Panel WEISTEEL, as manufactured by the HENRY WEIS MANUFACTURING CO., INC., Elkhart, Indiana.

Partitions—Partitions, posts, headrail (backs, utility end plates, and covers), shall be built of not less than 16-gauge, full pickled, cold rolled furniture steel. All partition panels to have sanitary V-shaped moulding at top and bottom formed of the same sheet, which shall be interlocked and welded into the post. Furnish necessary wall and top post fittings and brass foot castings, which shall be adjustable to take up any variation in the walls and floors. Provide necessary rectangular headrail, not less than 16-gauge, to brace partitions.

Doors—Doors, where shown on plans, are to have 3-in. stiles and rails, with sanitary cove moulding and panels of 18-gauge, full pickled, cold rolled furniture steel. The mitres of stiles and rails shall be reinforced and electrically welded by the WEISTEEL process and finished flush.

Hardware—The hardware is to be Panel WEISTEEL standard, consisting of a Universal Gravity Hinge, Heavy Slide Bar Latch, Pull and Coat Hook. All parts to be brass, nickel plated.

Finish—All work is to be finished at the factory with prime coat of (1—baked red oxide primer or gray metal primer), (2—baked-on enamel, either sage green or light grey).

State specifically by number which finish is desired.

All shower partitions finished at factory with baked red oxide primer.

Shower Curtains and Hangers—Shower curtains shall be of [nine] [twelve] ounce duck canvas. (Other material may be specified if preferred.) Shower curtain hangers shall be WEISTEEL specially designed, roller bearing, and brass, nickel plated, to accommodate rectangular headrail.

Assembly—All parts shall be accurately and substantially assembled with all joints and seams completely filled. Work shall be laid out and assembled to conform to the layout and details shown on plans.

Installation—All work shall be set in place in accordance with the manufacturer's instructions and approved shop drawings. All material included in this specification shall be left in an acceptable condition and complete.

STANDARD PANEL WEISTEEL

These compartments, of rigid steel construction, have proved their worth in all classes of buildings. For more than twenty years they have met all the requirements of discriminating architects and builders.

In appearance, quality of material and workmanship, they harmonize with any materials with which they may be assembled. Where sanitation, durability and economy are primary considerations, they have established a new standard of utility value.

Features

Sanitary—All joints are closed. Design of mouldings, floor fittings, enclosed hinge and latch, and the absence of projecting screws or bolt heads prevent the accumulation of dust and dirt.

Substantially Constructed—Each partition, with its integral front and rear post, is a single substantial unit. (See architect's specifications.)

High Quality—There are no unsightly edges or open seams. Joints between panels and rails, and between panels and posts, are closed and sealed—door corners are finished flush and smooth. All fittings are small and fit the sheet steel members snugly.

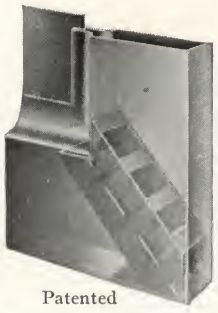
All enamel work has the eggshell finish usually found on the best quality enameled steel products. All shower partitions are first coated with a special oxide primer baked on at 350°. This primer under tests shows wearing qualities ten times greater than metal primers usually applied.

Economical—With average care, these compartments should last as long as the building.

Erection—The erection of WEISTEEL is simple and foolproof. Only average workmen are required and the cost is comparatively very low. Three bolts only are required to erect a partition—one in the floor and two in the wall fittings. All units are made accurately to dimensions, drilled to template and completely assembled. All holes for the application of hardware are drilled at the factory. No fitting, cutting or drilling is necessary at the job. All parts are plainly marked to correspond to detailed erection drawings. Confusion is thereby eliminated when distributing the material at the building. Complete directions for erection are sent with each shipment.

The Weisteel Door

Eight years ago, the present WEISTEEL exclusive process of electrically welding the four corner joints of the mitered stiles and rails was perfected. Each stage of the process is so mechanically controlled that every door is accurate to required dimensions, and square. The unique reinforcements, here illustrated, become, by this process, an integral part of each corner of the door. At the same time, the mitered ends of the hollow stiles and rails are fused together so that door joints are strongest sections of unit. These continuous, fused joints are then finished flush and smooth.



Patented

Phantom View of Door Construction

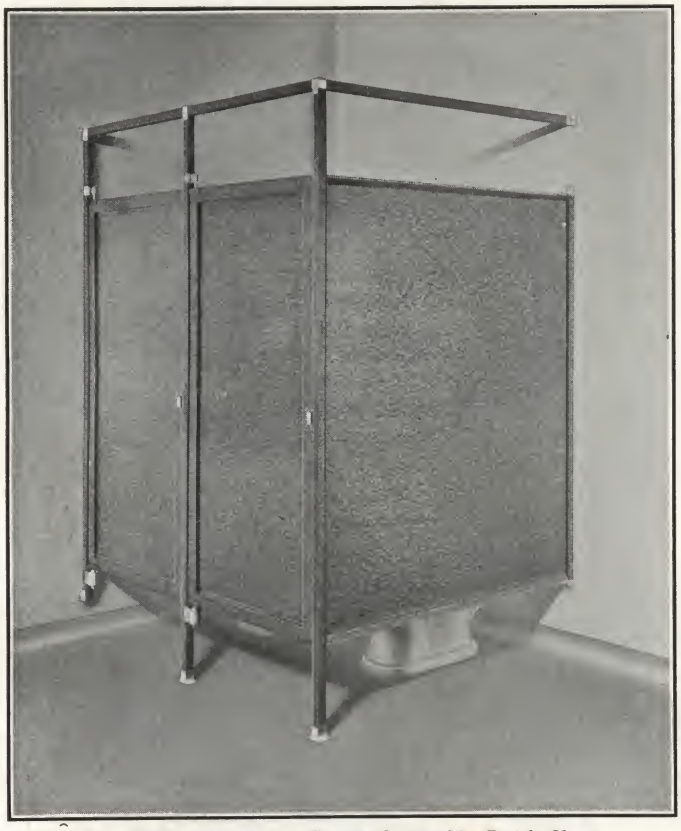
This process of joint construction, together with the method for assembly of the panel with the rails and stiles, results in a door that is rigid, wholly free from "wind" or "weave," pleasing in appearance, practically incapable of being damaged or destroyed under the most severe abuse.

Weisteel Partition Top and Bottom V-rails

These are formed as an integral part of the 16-gauge partition panels. Each V-rail has joint on one side only. Note how joint is locked and sealed at intersection with panel. This construction affords maximum rigidity, sanitation and pleasing appearance. Bottom V-rails of all shower enclosures are protected with asphaltum acidproof paint.



PANEL WEISTEEL COMPARTMENT—TYPE C



Type C Compartments—Standard Wrinkle Finish Shown

Architect's Specifications

All Toilet Stalls, Shower and Dressing Room Compartments, Partitions, etc., noted in this specification shall be WEISTEEL Type C, as manufactured by the HENRY WEIS MANUFACTURING CO., INC., Elkhart, Indiana.

Partitions—Partitions, rear posts, headrail (backs, utility end plates and cover), shall be built of not less than 18-gauge, pickled, cold rolled steel. Front posts shall be 14-gauge steel. All partition panels to have sanitary V-shaped moulding at top and bottom, formed of the same sheet, which shall be interlocked and welded into the post. Furnish necessary wall and top post fittings and brass foot castings, which shall be adjustable to take up any variation in the walls and floors. Provide necessary square headrail not less than 18-gauge to brace partitions.

Doors—Doors, where shown on plans, to have 2-in. stiles and rails, and panels of 18-gauge, full pickled, cold rolled steel. The mitres of stiles and rails shall be reinforced and electrically welded by the WEIS process.

Hardware—The hardware is to be WEISTEEL Type C standard, consisting of a Universal Gravity Hinge, Pendulum Latch, Pull and Coat Hook. All hardware parts to be special analysis, steel, heavily cadmium plated.

Note: This unbreakable steel hardware is rustproofed with cadmium by the well-known Udylite process. Tests conducted by Underwriters' Laboratories prove cadmium plating gives 77 times the protection obtainable from standard nickel plate and 5 times the protection of sherardizing. Cadmium plating, when properly applied, will not chip, scale, peel or blister and provides a striking silvery gray lasting finish.

Finish—All work is to be finished at the factory in prime coat of (1—red oxide primer, baked on at 350° F.), or (2—gray metal primer), (3—gray or green wrinkle baked enamel or standard gray or green baked enamel).

State specifically, by number, which finish is desired.

All Type C Partitions furnished to enclose showers have Weis red oxide primer, baked on at 350° F., whether shipped in prime coat or standard wrinkle enamel finish.

Assembly and Installation—All parts shall be accurately and substantially assembled with all joints and seams completely filled. All work shall be set in place in accordance with the manufacturer's instructions and approved shop drawings.

PANEL

WEISTEEL TYPE C

In Type C Panel WEISTEEL, the HENRY WEIS MANUFACTURING CO., INC., has made available at minimum cost, partitions and doors which retain many of the features of design and construction for which standard Panel WEISTEEL has long been recognized as a quality leader. Type C offers more service value per dollar invested than other single sheet panel compartment now available. Type C Panel WELSTEEL is inexpensive and is entirely suitable for use in a wide variety of buildings where the item of costs must be carefully considered.

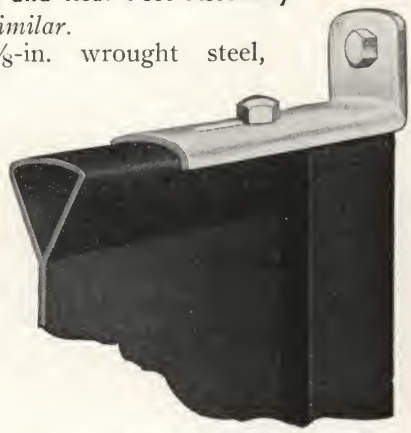
Panel V-rail and Rear Post Assembly

Top and bottom similar.

Wall brackets ⅛-in. wrought steel, cadmium plated.

Brackets adjustable to allow for any variation in wall.

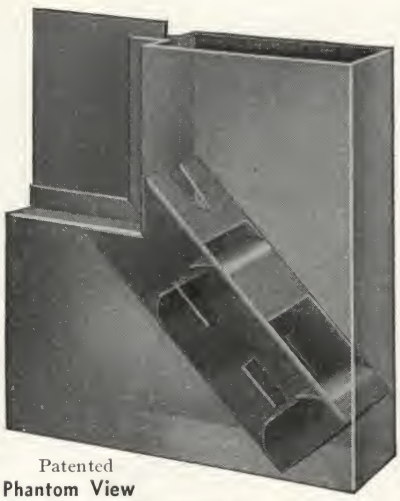
V-rails are formed as an integral part of the partition panel. (An exclusive WEIS design.) Each V-rail has joint on one side only. Joint is locked and sealed at intersection with panel.



Type C Panel V-rail and Rear Post Construction

Type C Door Construction

Type C Panel WEISTEEL doors have 20-gauge stiles and rails, 2 in. wide, 1 in. thick. Corners are mitered and reinforced as illustrated and electrically fused by WEIS exclusive welding process. During welding process, reinforcement shown is fused with stiles and rails and becomes an integral part of them. Panels are 18-gauge, pickled, cold rolled steel. Panels with stiles and rails are electrically welded into a rigid unit.



Patented
Phantom View
Door Corner Construction

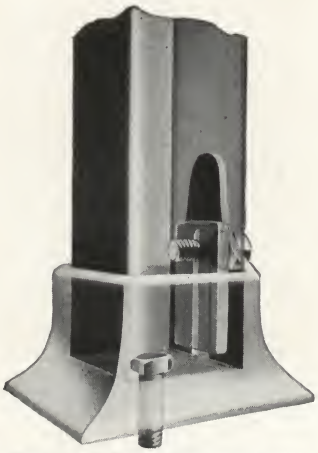
WEISTEEL HARDWARE AND FITTINGS FOR STANDARD PANEL AND FLUSH COMPARTMENTS



Partition Wall Fitting
This fitting, which affords two point anchorage to the wall, is adjustable to take up variations in the wall

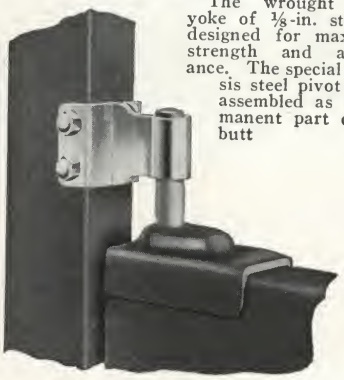


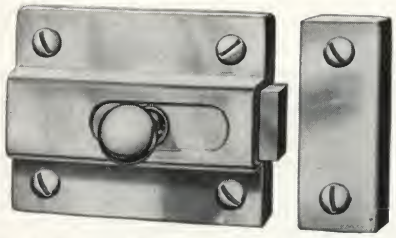
The Flush and Panel Weisteel Front Post Heavy Pressed Steel Fitting
The rectangular headrail is held rigidly by a safety head setscrew. Both headrail and post are rigid and stay in alignment



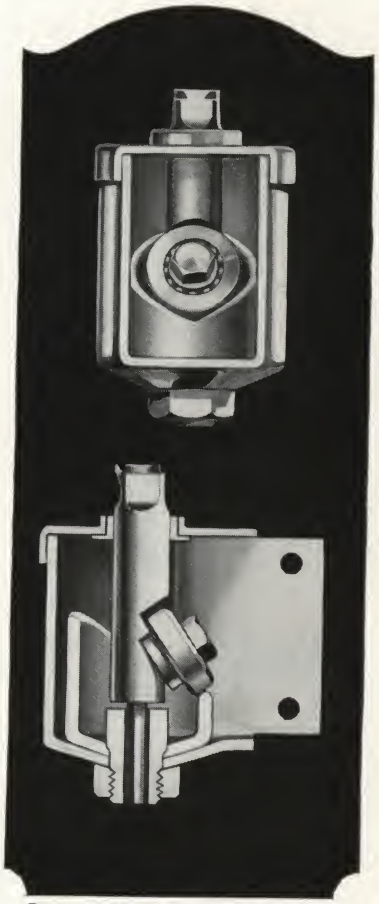
The Flush and Panel Weisteel Brass Foot Casting
(Phantom view.) Shows provision for adjustment to variations in floors. This self-draining shoe is bolted to floor and post is then inserted, concealing the bolt. This design of foot casting, in smooth finish Government formula nickel alloy, is also furnished for Flush WEISTEEL

Standard Flush and Panel Weisteel Upper Hinge Pivot
The wrought brass yoke of ⅛-in. stock is designed for maximum strength and appearance. The special analysis steel pivot pin is assembled as a permanent part of the butt

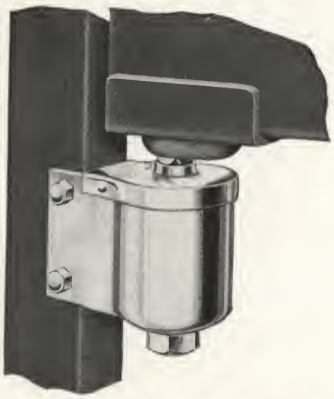




No. B-116. Panel Weisteel Slide Bar Latch and
No. B-60. Panel Weisteel Latch Keeper Only
No. B-119. Flush Weisteel Slide Bar Latch Used with Keepers B-126 or B-127



Cutaway View of Weis Universal Gravity Hinge
Patented



Standard Flush and Panel Weisteel Universal Gravity Hinge
Simple and troubleproof. Exceptionally strong and durable. Used for either single or double acting doors. Will hold door closed or open at any point selected within radius of swing. Can be mounted for right or left-hand door opening in or out. Regular or reverse action immediately obtained without changing any part of hinge construction



No. B-126. Keeper for Flush Weisteel Inswinging Doors



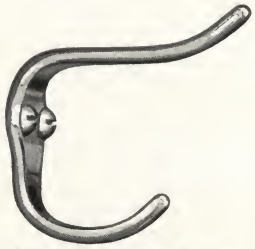
No. B-127. Keeper for Flush Weisteel Outswinging Doors



No. B-128. Strike for Flush Weisteel Doors Without Latches



No. C-7. Coat Hook
Combination coat hook and rubber tipped bumper; brass, nickel plated. Furnished when doors swing into compartment

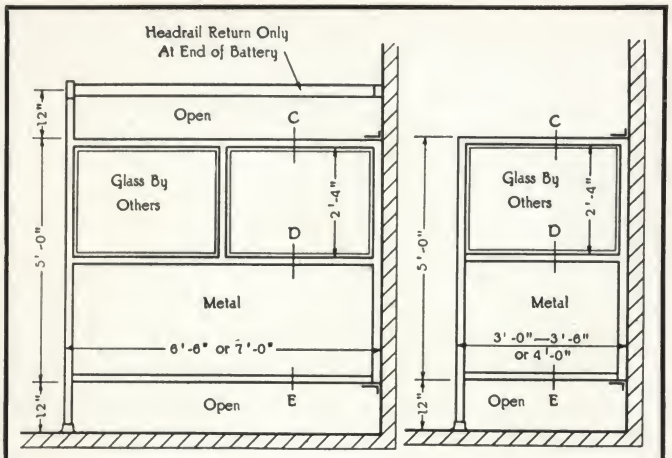


No. B-35. Coat Hook
Two-prong coat hook; brass nickel plated. Furnished in dressing rooms and compartments when doors swing out







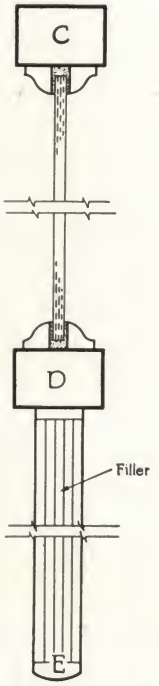


Ward Cubicles

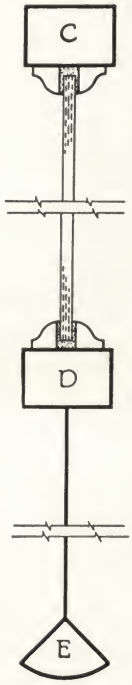
Infant and Waiting Booth Cubicles



Detail of Snap On Moulding and Clip



Typical Section of Flush Cubicles
Scale 3" = 1'-0"



Typical Section of Panel Cubicles
Scale 3" = 1'-0"

PANEL AND FLUSH WEISTEEL HOSPITAL CUBICLES

WEISTEEL Ward and Waiting Room Cubicles are the result of extended studies of hospital problems and consultations with numerous hospital architects, hospital consultants and executives. The proven advantages of cubicle equipment for the hospital, the staff and patients are quite thoroughly covered in a booklet (not a catalogue) prepared by the WEISTEEL Professional Service Department, under the title "Good Will and Income from Between Type Patients."

A copy of this booklet will be forwarded free, upon responsible request from architects or hospital executives.

WEISTEEL Cubicles are adaptable for use in maternity wards, children's wards, general wards, surgical and examination wards, and as waiting booths in hospital waiting rooms for out-patient departments and children's clinics. They can be installed in old buildings as readily as they can be included in new building plans.

The simplicity of erection insures a satisfactory installation with a minimum amount of interruption or confusion to surrounding hospital activity.

A corps of experienced engineers is available for the convenience of hospital architects and executives contemplating cubicle installations.

STALL DOORS AND HARDWARE FOR MARBLE, GLASS AND SIMILAR PARTITIONS

The HENRY WEIS MANUFACTURING CO., INC., offers two distinct grades of metal doors for application to marble, glass, slate and other partitions. These grades are designated as Weis METALUNITS, in one case, and as Stock WEISTEEL Doors and Hardware in the other. The specification of either Weis METALUNITS (custom built flush doors and hardware sold as a unit) or Stock WEISTEEL Doors and Hardware, assures undivided responsibility from the manufacturer and saves the architect a great deal of time and trouble because the one specification eliminates the necessity for selecting individual items and co-ordinating the respective trades.

In Class A, or monumental buildings, where strictly first grade, hollow metal quality is desirable in the toilet rooms, Weis METALUNITS meet the demand in every particular, and have the added advantage of greatly reduced weight as compared to conventional hollow metal construction. The excess weight of conventional hollow metal doors ordinarily requires specially designed and specially built hardware, if sagging and failure are to be avoided. In METALUNITS, reduced weight is achieved without the slightest sacrifice of rigidity, freedom from wind or durability. Moreover, each METALUNIT includes the hardware. Hence the door and complete hardware are designed and built to serve each other. The manufacturers are thus able to guarantee a satisfactory installation.

Stock WEISTEEL doors and hardware offer many of these benefits at lower cost. In the ability to deliver service, to withstand hard usage, Stock WEISTEEL Doors are just as satisfactory as METALUNITS. METALUNITS possess refinements in materials and workmanship and, particularly, refinements in finish which, naturally, cost more but which make METALUNITS suitable for the finest of buildings. Special provision is made for protection of the superior METALUNIT finish until the building is put in use.

A comparison of the specifications of the two lines of doors as printed below will make it easy for the discriminating architect to determine which of the two grades is the proper one to specify for a particular job.

Architect's Specifications

WEIS METALUNIT STALL DOOR AND HARDWARE

All W. C. Stall Door Hardware with Doors of sizes shown on plans shall be METALUNITS as manufactured by the HENRY WEIS MANUFACTURING CO., INC., Elkhart, Indiana. Doors shall be flush type, 1 in. thick and made of 22-gauge select prime furniture steel sheets (or aluminum alloy, Monel metal, bronze, or rustless alloys such as Allegheny metal; state which).

Before assembly, the inside surfaces of the side members shall be coated with an iron oxide primer baked on at 350° F. They shall then be spaced and insulated with a laminated corrugated fiber board filler, cemented to their inner surfaces. To assure uniform adhesion, all panels shall be subjected to a pressure of 500 lbs. per sq. ft., for 24 hours. Edges shall be bound and interlocked, under tension, with drawn steel moulding, which shall be welded at corners. Doors shall be guaranteed to be rigid and free from wind. All joints shall be ground so that all cross sections shall be true and uniform in profile. There shall be no exposed raw edges of metal and no open seams.

Finish—*Steel or Aluminum Alloy* METALUNITS: All materials shall be thoroughly cleaned, filled and sanded after which a bonding coat shall be baked on and sanded smooth. Final finish shall be two coats of Weis synthetic gum enamel of color selected. Each coat shall be baked on. Each door shall then be hand rubbed to piano finish.

Monel, Bronze, or Rustless Alloy METALUNITS: Any finish suitable and desirable for any of these metals will be furnished. Architect to include specifications accordingly.

Each door finished as above set forth shall be sealed in a Cromwell paper bag so made as to permit application of hardware and hanging of door without removal of bag.

All hardware shall be brass, chromium plated, or 18% nickel silver, satin finish. (Specify which.)

Erection—All stall doors and hardware specified above shall be erected in strict accordance with manufacturer's instructions. All drilling of marble for application of hardware shall be done by marble contractor from a template furnished by door and hardware manufacturer. Protective bags to remain on doors until building is ready for acceptance at which time this contractor shall remove same and leave doors and hardware in first-class acceptable condition.

STOCK WEISTEEL DOORS AND HARDWARE

All W. C. Stall Door Hardware and Doors of sizes shown on plans, shall be stock WEISTEEL designs (specify Standard Flush, Standard Panel, Type C Panel) as manufactured by the HENRY WEIS MANUFACTURING CO., INC., Elkhart, Indiana.

(Note: Standard Flush construction, Standard Panel construction and Type C Panel construction explained on preceding pages.)

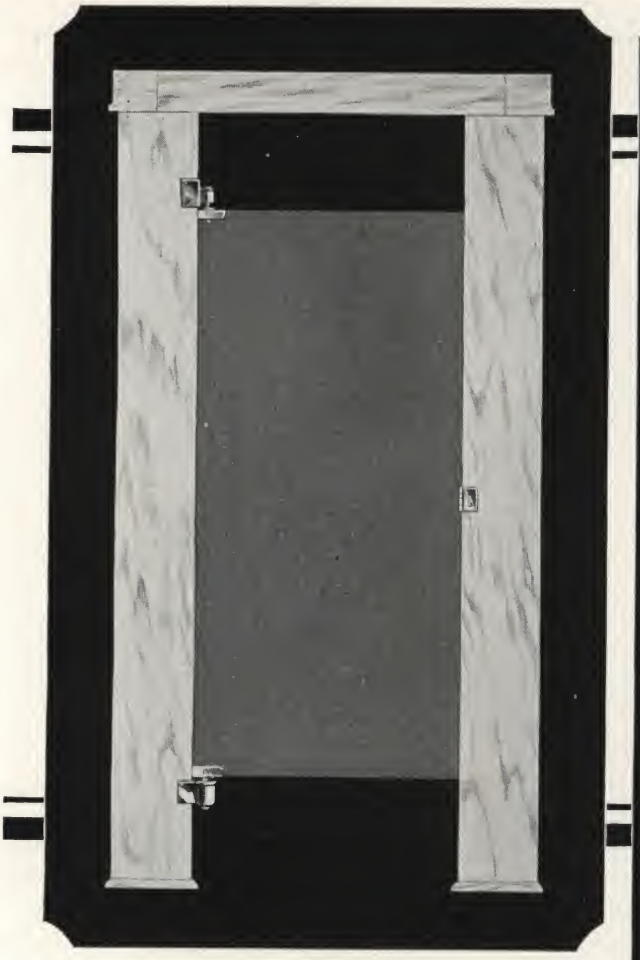
Finish—All material shall be thoroughly cleaned and given a heavy coat of gray metal primer.

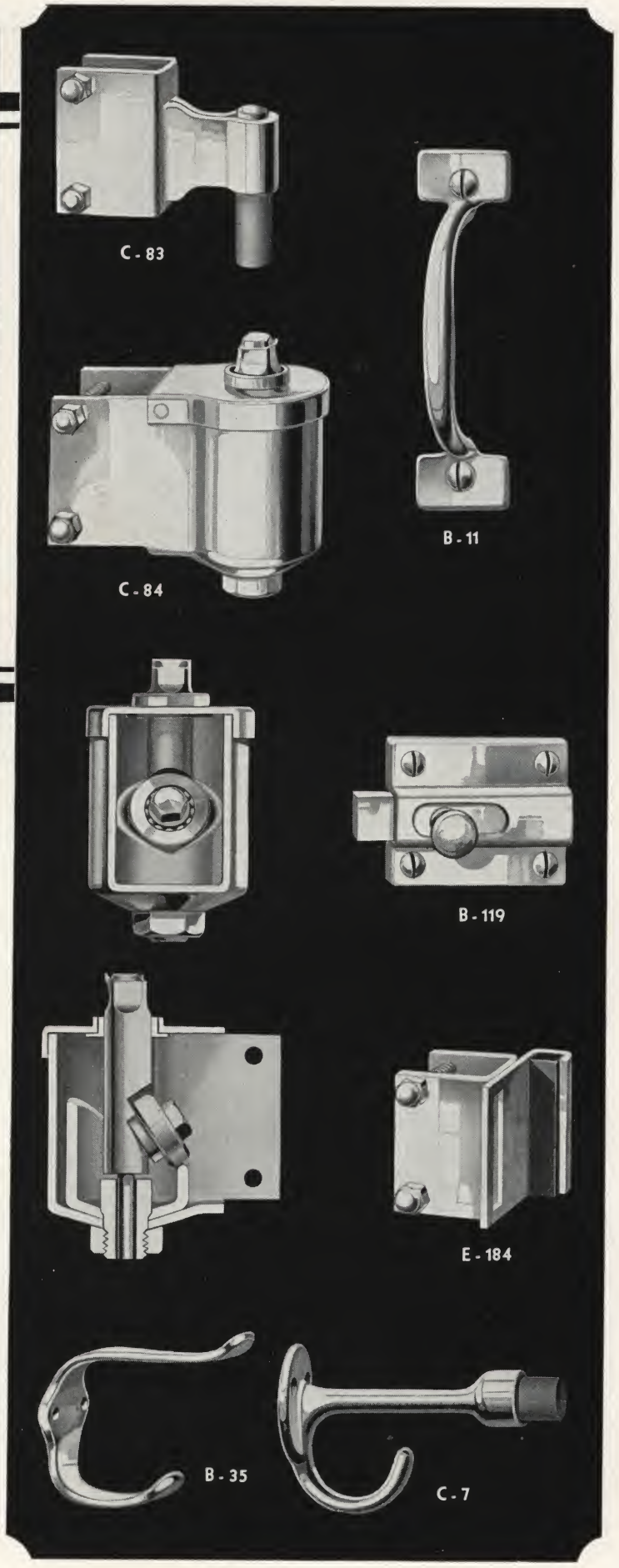
(1) Finish painting to be done after installation. (See painting specifications.)

(2) All material to be finally finished at factory with baked on enamel, either Sage Green or Light Gray. Special colors furnished at an extra charge.

Specifically state, in specifications, method No. 1 or No. 2 for final finish. All hardware to be nickel plated. Chromium plate furnished at an extra charge.

Erection—All stall doors and hardware specified above shall be erected in strict accordance with manufacturer's instructions. All drilling of marble for application of hardware shall be done by marble contractor from a template furnished by door and hardware manufacturer. Complete installation shall be thoroughly cleaned down and left in condition acceptable to architect.





Outstanding among the features of this hardware set is the Weis Universal Gravity Hinge, here illustrated. The ball bearing roller is so mounted on the pintle that in operation geometrical continuity of contact is maintained between the roller and its race (see illustration); thus, side thrusts and wear are eliminated. This new principle of construction definitely removes the cause of trouble which frequently develops in gravity hinges. Ball bearing roller and roller race are of case hardened steel. These with the pintle are cadmium plated. Exposed parts are brass, nickel or chromium plated. This hardware set is standard equipment on METALUNITS and Stock WEISTEEL Doors.

It is also available as a separate hardware set for wood doors or metal doors of other manufacture, where weight of door does not exceed 80 lbs. Standard sets of Weis W. C. Stall Door Hardware are furnished to fit any thickness of stiles, up to and including 2½ ins., of marble, Vitrolite, slate, terrazzo, etc. Variations for thickness graduate ⅛ in. from ⅞ in. to 2½ ins. inclusive. Hinge assemblies are also furnished for fly doors or swing gates.

When specified, a throw or pendulum type latch will be substituted for standard slide bar latch as illustrated.

A new Weis development is a top hinge fitting for mounting top of door on a line with top of partition stiles. Standard fittings as illustrated require stile to project at least 4 ins. above and below door.

THE SANYMETAL PRODUCTS COMPANY

Metal Partitions for Offices and Toilets

1690 Urbana Road, CLEVELAND, OHIO

NEW YORK OFFICE: 536 East 133rd Street

AGENCIES IN PRINCIPAL CITIES

PRODUCTS

SANYMETAL PARTITIONS for offices, factories, hospitals, churches, schools, hotels, etc.

SANYMETAL TOILET ROOM, DRESSING ROOM, SHOWER BATH and URINAL PARTITIONS, SCREENS and WAINSCOTS; SANYMETAL GRAVITY ROLLER HINGES for all toilet and part-length swinging doors and SANYMETAL TOILET ROOM HARDWARE.

Sanymetal
TRADE MARK U S REG

SANYMETAL STEEL TOILET PARTITIONS

Made in Three Types

Unit Panel partitions are simple and inexpensive. Full Panel partitions have panels and doors with matched stiles. Flush Panel partitions are designed for those who wish an insulated partition with plain surfaces, free of all molds.

Separate bulletins on any or all of these types furnished on request.

Architects and engineers, in laying out toilet rooms, can use the following standard size compartments: Width, 30, 32, 33, 34, and 36 ins. Depth, 36, 42, 48, 54, and 60 ins. Stock sizes of parts can be used with height of partitions above floor, 12 ins. Height of head rail above panel, 12 ins. Panel height, 54 or 60 ins., making over-all height, floor to head rail, 78 or 84 ins.

Partition Specifications

Unit Panel Partitions—Panel sheets to be furnished with stiles and rails on four sides. Top and bottom rails are to be drawn steel shapes with edges concealed and interlocked, 3¼ ins. wide by 1 in. thick, of gauge of not less than .040, with drawn steel vertical stiles with interlocked concealed edges 1¼ ins. wide by 1 in. thick, of not less than .035 gauge. The front stile of the panel is to be set and welded into recessed post, and the back stile into adjustable open channel securely fastened to the wall with concealed fasteners.

Full Panel Partitions—Panel sheet shall be furnished with matched stiles and rails on four sides, mitred, welded and ground flush. These stiles and rails are to be drawn steel shapes with edges concealed and made 3¼ ins. wide by 1 in. thick, of furniture-finished, cold-rolled strip steel of not less than .040 gauge. Front stile of panel is to be set and welded into recessed post, and the back stile into adjustable open channel securely fastened to wall with concealed fasteners.

Flush Type Partitions—Partition panels shall be made of two sheets of 22-gauge sheet steel, full cold-rolled, patent leveled, interlocked at top and sides with special drawn locking strip. These sheets to be spaced at least 1 in. apart and fully insulated between with sound-deadening, laminated, corrugated fiber board filler, with sheets glued to insulation with waterproof cement and allowed to dry thoroughly under pressure, so as to keep the partitions in true alignment. Partition panel to be set and welded into recessed post and set into open adjustable channel at wall.



General Specifications (Applying to All Three Types Above)

All toilet partitions and doors, entrance screens, shower enclosures, dressing rooms, are to be built of Sanymetal (specify type desired) as manufactured by the SANYMETAL PRODUCTS COMPANY, Urbana Road, Cleveland, Ohio.

Gauges—Gauges as recommended by the Bureau of Standards, U. S. Dept. of Commerce. Simplified Practice Recommendation R 101-29, as follows:

"Panel-type construction:

"In partitions of the following sizes or larger:

Depth	Height	Depth	Height
54	54	54	60
60	54	60	60

"Panel-sheet steel shall be of 16 gauge U. S. Standard (0.0613 in.).

"In partitions smaller than above mentioned, panel sheet steel shall be of 18 gauge U. S. Standard (0.0490 in.).

"Doors, panel-sheet steel shall be of 18 gauge U. S. Standard (0.0490 in.).

"Flush-type construction:

"Partitions and doors, panel-sheet steel shall be 22 gauge U. S. Standard (0.0306 in.) or heavier."

Note: Heavier gauges may be specified for panels if desired.

Partition Posts—The front post of partition is to be a drawn steel shape not less than 2 inches square with 1 in. wide by ¼ in. deep sunken panel on the four sides. Gauge of steel to be not less than .040.

Wall Channel—Partitions are to be fastened to wall with channel 1½ ins. deep by 2 ins. wide, made with 1 in. opening for insertion of panels. This channel to be a drawn steel shape of gauge of not less than .040.

Headrail Bracing—Headrail bracing is to be furnished of 1¼ in. drawn hollow tubing of not less than 16 gauge. Headrail bracing may be furnished of a rectangular shape 1½ ins. by ⅞ in., to be drawn shape of not less than .035 gauge.

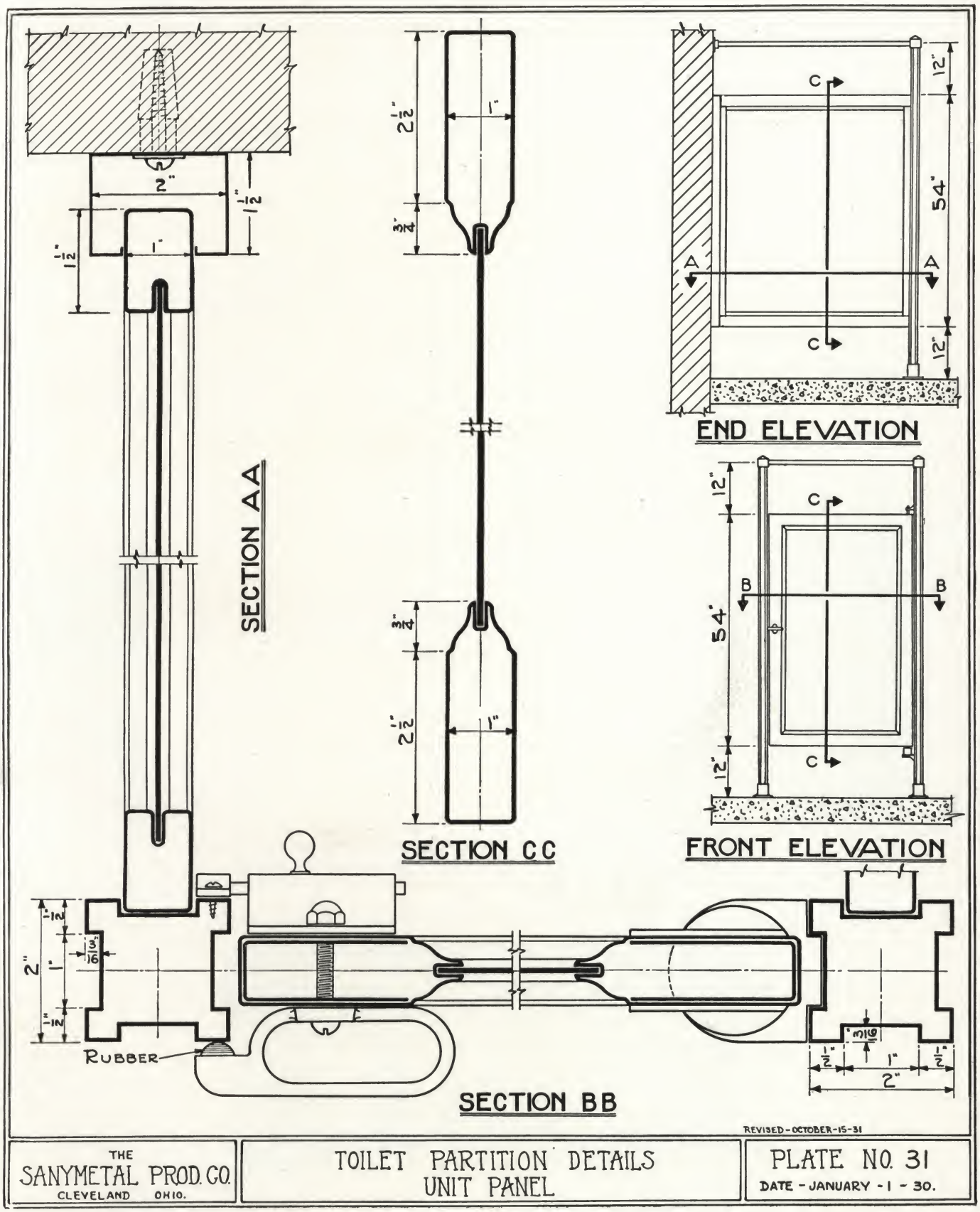
Partition Fittings—Front post of partition is to be fastened to floor, set into brass nickel plated, self-draining shoe, and to be securely anchored to the floor. Post caps for fastening headrail to top of post are to be wrought steel, painted to match finish of partition and headrail.

Panel Type Doors—These are to be made of .040 gauge reinforced drawn steel stiles 1 in. thick by 1¾ ins. wide, with 18 gauge full pickled, full cold rolled panel sheets. Stiles and rails are to be mitred, properly reinforced at corners, welded into complete unit and ground smooth.

Flush Doors—Construction same as that specified for Flush Panel Partitions, with edges ground smooth and buffed.

Door Hardware—All doors to be equipped with Sanymetal brass, nickel plated, encased full floating gravity ball-bearing roller hinges, made adjustable for (outswinging, inswinging, self-closing, self-opening) doors, and with combination cast aluminum slide latch, pull and rubber tipped stop.

Finish—All metal to be thoroughly sanded, washed with benzine, filled and primed with Sublimed Blue Lead, baked on. If enamel finish is desired, spray and bake on separately two additional coats of olive green or battleship gray color of best quality baking enamel. Shrivel finishes in above colors are optional.


2"
1 1/2"
1"
1 1/2"
SECTION AA
2 1/2"
1"
3/4"
3/4"
2 1/2"
1"
SECTION CC
C
12"
54"
A
A
C
12"
END ELEVATION
12"
C
B
B
54"
C
12"
FRONT ELEVATION
1 1/2"
2"
1"
1 1/2"
3/16"
RUBBER
3/16"
1/2"
1"
1/2"
2"
SECTION BB
REVISED - OCTOBER - 15 - 31
THE SANYMETAL PROD. CO.
CLEVELAND OHIO.
TOILET PARTITION DETAILS
UNIT PANEL
PLATE NO. 31
DATE - JANUARY - 1 - 30.

ESTABLISHED 1886 INCORPORATED 1905

ACME PARTITION COMPANY, INC.

Rolling Wood Partitions and Rolling Steel Doors

OAKLAND, CALIFORNIA

Look Up Our Local Office in Telephone Directory or Write to Oakland, California, for Information

Products

VERTICAL and HORIZONTAL WOOD ROLLING PARTITIONS.
VERTICAL and HORIZONTAL STEEL ROLLING DOORS.

LOCAL REPRESENTATIVE

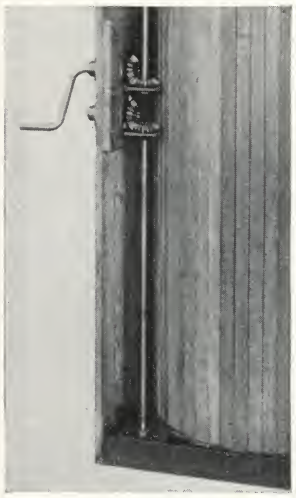
HORIZONTAL WOOD ROLLING DOORS (Exterior).
Also manufacturers of Wardrobe Fronts.

ACME WOOD ROLLING PARTITIONS

Vertical Wood Rolling Partitions (Side Coiling) for Interior or Exterior Use

Construction

Acme Vertical Partitions embrace an unusually successful mechanism which has been designed exclusively for side coiling action. All Acme Vertical Partitions are fabricated of T & G slat members of Oregon Pine (Douglas Fir). These slats have a minimum thickness of $\frac{13}{16}$ in. Other woods can be used where the height does not exceed 16 ft. The slats are bound together by flexible cables of galvanized steel which pass through the slats transversely at approximately 30 ins. on center.



Type "J"

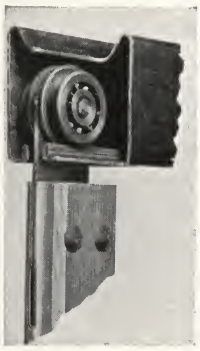
The partition is carried across the opening on an overhead tubular track on double ball bearing hangers of the car wheel type. The track terminates just inside the coil box, and, as the hangers leave the track the partition comes to rest on a rotating metal disc. The weight of the partition, as applied to the overhead truss, is approximately 3 lbs. to the square foot. The disc assembly, including the weight of the coiled partition, is carried on an angular contact ball bearing (SKF or Gurney).

Each Acme Vertical Partition and its operating mechanism is completely assembled and installed in its coil box at the factory, where it is tested in actual operation and all necessary adjustments are made prior to shipment. The result is an installation on the job that works perfectly. The standard floor groove is $\frac{13}{16}$ in. wide but the Type "M" floor groove, $\frac{7}{16}$ in. wide, is available if desired. This is made possible by the use of a malleable iron shoe on the bottom of each slat member.

At least 85% of the slats are vertical grained. In common with all Acme rolling doors and partitions, the vertical partitions are equipped with a patented expansion device which keeps the slats tightly together and yet will take care of the swelling and shrinking due to atmospheric changes.

Types

Type "J"—Type "J" Acme Vertical Partitions are for use where the single unit contains at least 600 sq. ft. of area. There is no maximum limitation on the size of this type except where a single partition of this type contains more than 1500 sq. ft., in which case it is advisable to consider motor operation. Type "J" partitions are operated in both directions by hand crank through cut steel mitre gears. The crank may be located either upon the side or the front of the coil box.



Section of Overhead Track
Showing type of hanger used

Type "MJ"—When the single unit contains between 400 and 600 sq. ft. Type "MJ" Partition is used, the only difference between this type and Type "J" being that the partition is pulled out of the coil box by hand and returned by hand crank.

Type "K"—This type of partition is used where the single unit has an area of less than 400 sq. ft. Construction is similar to the Type "J" partition in all respects save that the partition is manually operated in both directions, the partition being coiled within the box by the action of specially processed springs which are threaded transversely through the slats. This construction insures positive coiling as each foot of the partition has its own inherent coiling action.



Acme Type "J" Vertical Partition Used in the Gymnasium of the East Side High School, Madison, Wis.

90 ft. wide, 22 ft. high. Moving section of each partition weighs 1½ tons, but they are capable of being operated with ease by any child of high school age. This installation has given continuous satisfaction since being installed in 1925. In March, 1930, an exact duplicate of this installation was furnished to divide the gymnasium of the West High School at Madison

Where Used

Type "J" Partitions will be found to be an ideal form of closure for *openings of unusual size,* such as the division of large banquet rooms, lodge halls and gymnasiums, and as a closure across the proscenium of a wide stage. Type "K" partitions provide a convenient form of closure for dividing classrooms and, in some instances, for forming the division between classrooms. All types of Acme Vertical Partitions may be used in exterior openings when desired.

VERTICAL COIL BOX DIMENSIONS FOR SINGLE PARTITIONS

Width, including box	Type "J" and "MJ"	Type "K"
8 to 9 ft.	21 ins. square	18 ins. square
10 to 12 ft.	22 ins. square	19 ins. square
13 to 15 ft.	23 ins. square	20 ins. square
16 to 17 ft.	24 ins. square	21 ins. square
18 to 20 ft.	25 ins. square	22 ins. square
21 to 23 ft.	26 ins. square	23 ins. square
24 to 26 ft.	27 ins. square	24 ins. square
27 to 29 ft.	28 ins. square	25 ins. square
30 to 32 ft.	28 ins. square	26 ins. square
31 to 35 ft.	29 ins. square	
36 to 40 ft.	30 ins. square	
41 to 45 ft.	31 ins. square	
46 to 50 ft.	32 ins. square	

Specifications

Provide and install, as shown on the plan, single unit (a pair) of Acme Type "J' Vertical Partitions as manufactured by the Acme Partition Company *of Oakland, California. These partitions are to be fabricated of Oregon pine and are to receive a shop coat of oil (oil stain) at the factory before shipment. Standard (Type "M") floor groove will be used.*

Horizontal Wood Rolling Partitions (Coiling Overhead) For Interior Use

Slats of Oregon pine, white pine, white cedar, birch, or oak. The standard slat thickness is ½ in. but a slat thickness of ⅝ in. is available as for use in wide openings. Our patented expansion joint is part of all Acme construction and is used on every Acme Partition. Movable posts may be used between two or more sections.

Partitions are carefully counterbalanced by springs operating in spring ball bearing drums upon the shaft. In opening over 12 ft. wide a trussed shaft is used, the springs being assembled in spring cages at the ends of the shaft. This type is also ball bearing.

ACME ROLLING DOORS FOR INDUSTRIAL USES—WOOD OR STEEL CONSTRUCTION

Wood Doors

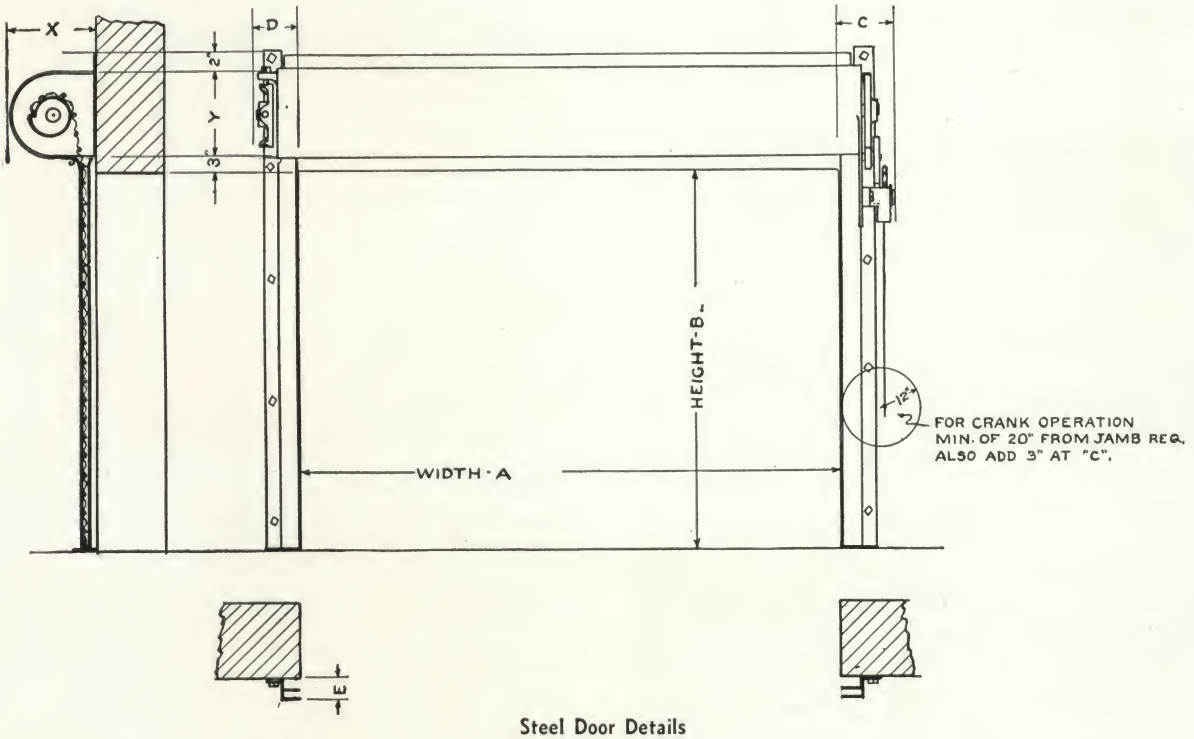
Class "A." The slats of the wood doors are from ¾ to 1⅛ in. thick, and from 1½ to 2¼ ins. wide, of vertical grained Oregon pine threaded on phosphor bronze tapes. Operation may be by chain, crank or motor. Available in widths up to 26 ft. and up to 25 ft. high, with a maximum area of 500 sq. ft.

Steel Doors

Acme Rolling Steel Doors are of the same high quality for which Acme Partitions have long been noted. The interlocking steel slats are of open hearth copper bearing steel from 16 to 22 gauge in thickness. Malleable iron end locks are used. Acme Rolling Steel Doors are counterbalanced by the use of helical torsion springs enclosed in steel barrels. Operation may be manual or by chain, crank or motor.

Testing

Acme doors and partitions are tested in actual operation prior to shipping and all necessary adjustments are made. This insures a smooth and easy operation and lessens the installing costs.



Steel Door Details

CLEARANCE SCHEDULE

Type	Width—A				Height—B																	
					0 to 6 ft.		6 to 8 ft.		8 to 10 ft.		10 to 12 ft.		12 to 14 ft.		14 to 16 ft.		16 to 18 ft.		18 to 20 ft.		20 to 22 ft.	
	A	C	D	E	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
F. M.	0 to 12 ft.	4½ in.	5 in.	4 in.	12½ in.	12 in.	12½ in.	12 in.	13½ in.	13 in.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
F. C. G. S.	8 to 12 ft.	6 in.	5 in.	4 in.	12½ in.	12 in.	12½ in.	12 in.	13½ in.	13 in.	13½ in.	13 in.	14½ in.	14 in.	.....	.....	.....	.....	.....	.....	.....	.....
F. C. G. D.	10 to 12 ft.	8 in.	6 in.	4 in.	.....	.....	.....	.....	.....	.....	.....	.....	14½ in.	14 in.	15½ in.	15 in.	15½ in.	15 in.	17½ in.	17 in.	17½ in.	17 in.
F. C. G. D.	12 to 16 ft.	8 in.	6 in.	5 in.	12½ in.	12 in.	12½ in.	13 in.	13½ in.	14 in.	13½ in.	13 in.	14½ in.	14 in.	15½ in.	15 in.	15½ in.	15 in.	17½ in.	17 in.	17½ in.	17 in.
F. C. G. D.	16 to 18 ft.	8 in.	7 in.	5 in.	12½ in.	12 in.	13½ in.	13 in.	14½ in.	14 in.	15½ in.	15 in.	15½ in.	15 in.	17½ in.	17 in.	17½ in.	17 in.	18½ in.	18 in.	18½ in.	18 in.
F. C. G. D.	18 to 20 ft.	8 in.	7 in.	5 in.	.....	.....	14½ in.	14 in.	15½ in.	15 in.	15½ in.	15 in.	17½ in.	17 in.	17½ in.	17 in.	18½ in.	18 in.	18½ in.	18 in.	20½ in.	20 in.
F. C. G. D.	20 to 22 ft.	10 in.	7 in.	5 in.	.....	.....	.....	.....	.....	.....	15½ in.	15 in.	17½ in.	17 in.	17½ in.	17 in.	18½ in.	18 in.	18½ in.	18 in.	20½ in.	20 in.

ALLEN-DREW COMPANY

DIVISION OF BABCOCK-DAVIS CORPORATION

Specialists in the Motor Operation of Building Parts

474 Dorchester Avenue, BOSTON, MASS.

Products

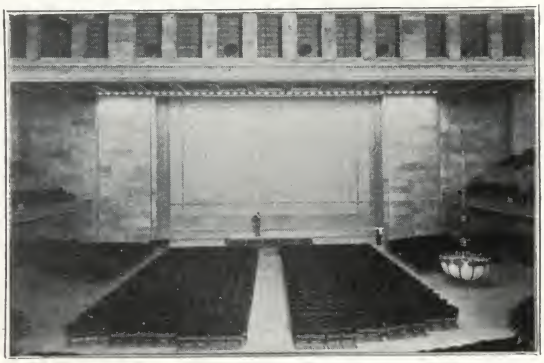
Motor Operated:

Asbestos, Steel and Soundproof Curtains.
Blackboards.
Bleachers for Gymnasiums.
Bridges for Industrial Buildings.
Curtains (Lightproof).
Dampers.
Doors for Airplane Hangars, Firehouses, Garages, Docks, Warehouses, etc.
Doors, Mechanically Operated—Vertical Lift.
Elevator (Orchestra, Organ, Stage).
Electric Draw Curtain Machines.
Floors (Lift or Rotating).
Gates.
Jail Gates.
Orchestra Pit Lifts.
Operators for Movable parts of Buildings.
Partitions—Vertical Sliding or Horizontal.
Roofs—Sliding.
Show Windows (Disappearing, Vertical Slide).
Walls—Vertical or Horizontal Sliding.

Our products, and the application, cover such a wide field it is impossible to describe in reasonable space all the different things we operate by motors. Below we show a few different types.



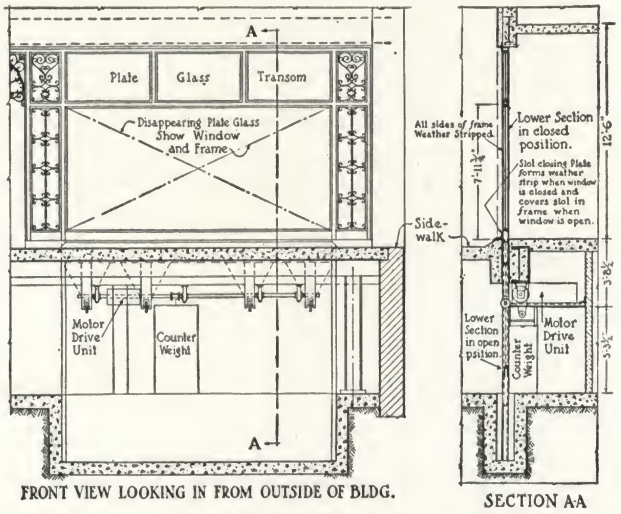
Municipal Auditorium, New Orleans, La.
Motor operated proscenium walls, curtains, entire stage, stage ceilings and orchestra pit. Movable stage 50 ft. by 128 ft., wgt. 240,000 lbs. Movable walls 128 ft. by 42 ft. high, 10 in. thick, wgt. 100,000 lbs. each



The same installation as above showing walls closed, making three halls out of one

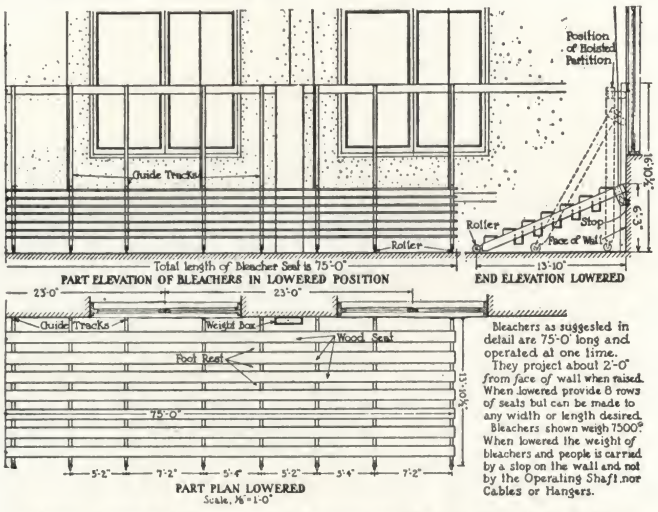


Firehouse Door
Four-piece motor operated door installed in New York City Firehouse



FRONT VIEW LOOKING IN FROM OUTSIDE OF BLDG. SECTION A-A

Disappearing Show Window—Rolls Royce Show Room, Boston
Motor operated disappearing plate glass show window (patent applied for). The only means of getting automobiles into show room. This type can be any length including front entrance doors and several bays which all disappear below the sidewalk



Motor Operated Bleachers, Washingtonville, N. Y., High School
Motor operated bleachers can be made in any size. When not required, pushing of a button raises the bleachers close against the wall out of the way

Specialists in the Motor Operation of Doors, Windows, Walls and Other Engineering Problems of a Similar Nature

Allen-Drew Engineering Service

Our Engineering Department is at the service at all times of those who desire estimates, preliminary layouts and specifications where the motor operation of doors, gates, windows, and other work of this nature are involved.

We also operate as consultants on major operations involving the moving by electricity of large sections involving soundproof, fireproof or other special features of similar nature, and we are prepared to compile complete calculations, specifications, detailed plans, and other engineering work necessary.

It is essential that we be advised of a project in its early stages as our work involves problems in electrical control, structural framing, mechanics, acoustics, and fireproof construction which make it absolutely essential that each detail be incorporated in such a way as to co-ordinate the balance of the construction.

Standard Range of Motor Operated Equipment

We have electric-drive equipment for parts of buildings of any size.

We operate doors for openings 100 ft. wide and 25 ft. high, representing a total weight of 30 tons in some cases.

We have walls covering openings 128 ft. wide by 42 ft. high weighing up to 50 tons; floors covering 6400 sq. ft. weighing up to 120 tons; ceilings up to 5000 sq. ft. in area weighing 30 tons; and other parts of buildings of other nature.

VERTICAL SLIDING WALLS AND PARTITIONS

For All Services—Stage Curtains, Gymnasium Divisions, etc.

The great possibilities of the use of motor operated vertical lift walls are being realized and made use of more and more by architects. Some of the uses in gymnasiums of high school and college auditoriums as well as in immense halls such as are used for conventions are illustrated here.

Walls of this nature can be finished in almost any way desired. The illustration below shows an immense wall finished to represent stone on one side to give architectural effect and on the other side to take the rough usage of a gymnasium. Some of the methods of finishing which we have used are plastering, vitrified cellular asbestos, wood and cork. These all have their own particular advantages under certain conditions.

General Construction

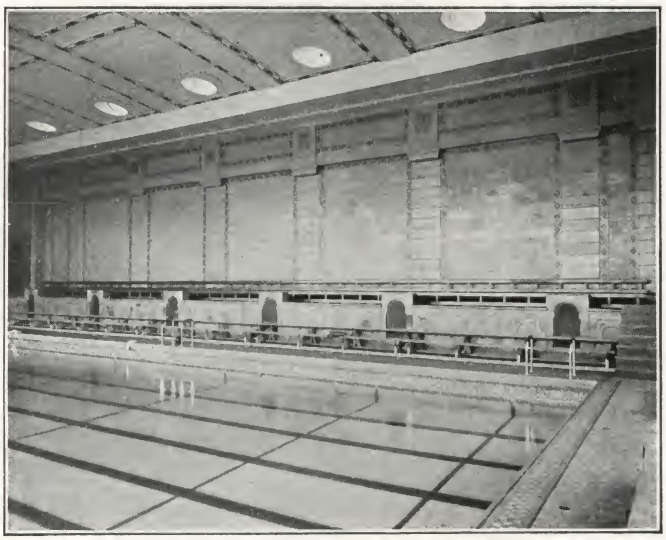
Vertical lift walls may be constructed in a variety of ways. The best construction to secure the maximum soundproofing and fireproofing qualities are described as follows:

Framing should be of rigid steel construction of the proper size to carry the span between the lifting cables and the weight of the covering which is to be applied to the framing. The covering should consist of not less than 20-gauge sheet steel securely fastened to the framing, with the interior filled with soundproofing and fireproofing material.

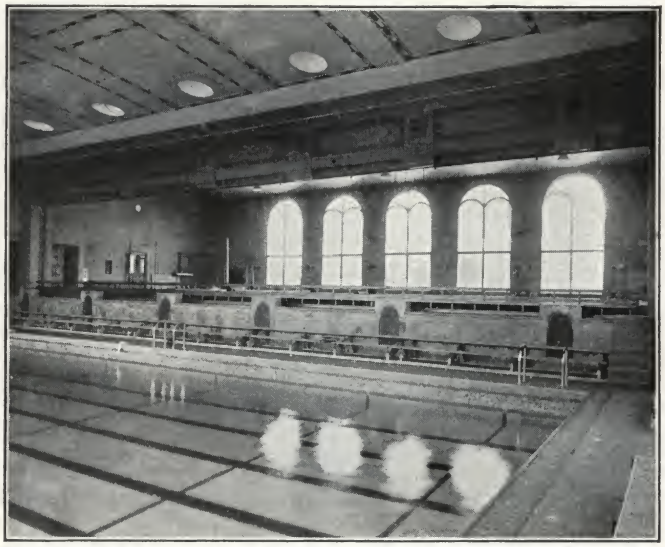
The bottom of all walls and curtains is faced with felt or rubber sealing strips for the closing of any opening which might occur, due to unevenness of the floor.

The partition should be so framed that where the pull-up chains or cables are attached, the steel members are to run continuous the entire height of the partition in order to transmit the load to all parts of the wall or partition.

At the bottom of both walls and curtains cast dowel pins are placed. These pins to be placed at not over 15 ft. on centers and in conjunction, automatic opening and closing floor pockets are placed in the stage floor at the point where each of these dowels occur. These dowels and pockets are of sufficient size and strength to hold the walls and curtains rigidly to the floor and prevent buckling of the walls and curtains should they receive heavy thrusts near the floor line. The face of the floor pocket should be set flush with the floor and be of bronze. The covers of these are closed by springs of sufficient size to prevent this depression, except by the walls and curtains themselves.



Looking Across Swimming Pool with Dividing Wall Lowered



Wall Raised Into the Ceiling Showing the Combined Gymnasium and Pool

Installation Shown Is Located in the Intra-mural Sports Building, University of Michigan

FOLDING PRODUCTS CORPORATION

Manufacturers of Fol-Dec Folding Doors, Partitions and Window Closures

228 South Desplaines Street, CHICAGO, ILL.

REPRESENTATIVES IN ALL PRINCIPAL CITIES

Folding Doors and Partitions

Fol-Dec Folding Doors and Partitions are a patented means for closing off adjoining rooms or dividing one room into smaller units. Resembling draperies, they can be made to harmonize with any color scheme or decorative effect.



Construction

Steel upright stiles, held in place by steel spacers, are covered on each side with a layer of heavy felt. Over this felt is placed a decorative material, such as velours, tapestries, silks, fabrikoid leather, etc. The decorative fabric is so attached to the frame that it may be easily removed in the event it is desired to have it cleaned or replaced. Ball bearing rollers, under each stile, assure easy and noiseless operation as they glide over a small track set flush with the floor.

Advantages

Fol-Dec Doors when folded back give the general appearance of perfectly folded draperies, thereby eliminating the necessity of further decorations. The air pocket construction, between two layers of heavy felt, insures the greatest privacy and improves the acoustics. They conserve space, permit economy in building construction, as well as add beauty and refinement to any interior. They will not warp or stick. Fol-Dec Doors combine beauty, utility, economy and privacy.

Installation

Fol-Dec Doors are self-contained and easily installed, needing no special construction as they are fastened to the jambs or side walls by means of vertical spring locks, which fasten in both the top and the bottom tracks.

Color

Any color can be selected to match the color scheme or decoration, and each side can be made up in a different color if so desired.

Fabric

Velours, tapestry, silks, fabrikoid leather, etc., are used for the decorative covering on Fol-Dec Doors.

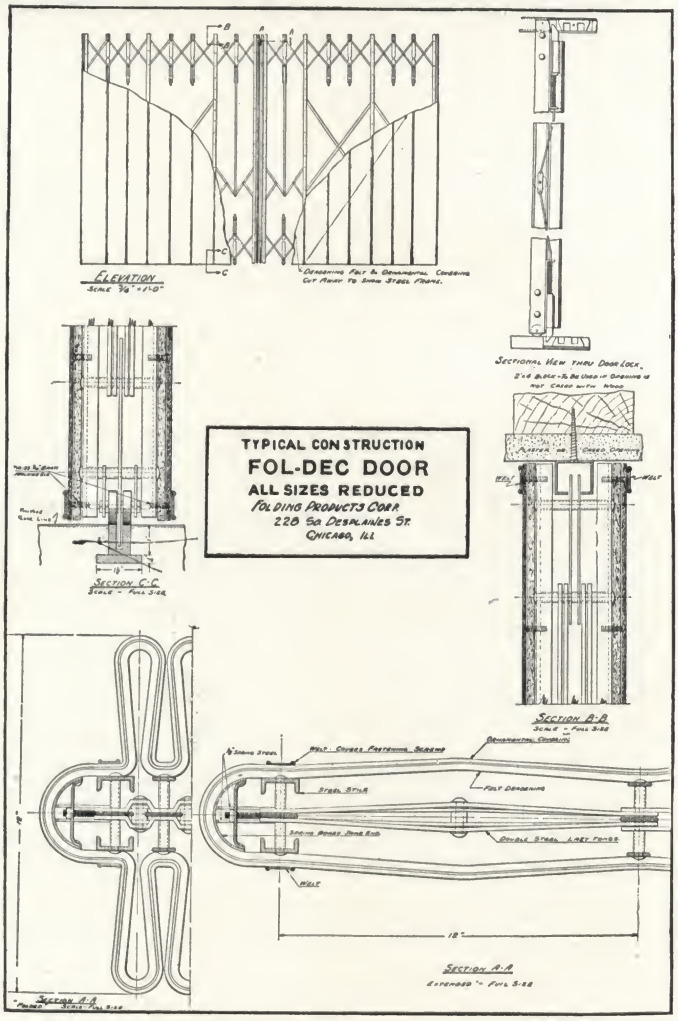
Size

Fol-Dec Doors and Window Closures are custom built for any size opening.

Service

Doors are shipped complete with top and bottom track and all necessary hardware ready for installation.

We will gladly submit plans, estimates or further information on request. Specify Fol-Dec Doors.



NORDELL LTD.

Manufacturers of Folding Doors

59 East Van Buren Street, CHICAGO, ILL.

Drapefold "THE SMART DOOR"







NORDELL DRAPEFOLD DOORS

The newest in door design. Nordell Drapefold Doors through exclusive patented construction are designed for modern interiors and space-saving convenience. Smart and practical, they harmonize with any decorative plan. Drapefold Doors herald a new era in doorway beauty for homes, apartments, offices, shops, stores, restaurants, hotels, clubs, etc.

Practical for Any Interior—Drapefold Doors are ideal for the small apartment with limited floor space, in closing off kitchenettes, dinettes, wall beds, dressing closets, etc. A decided advantage over the swinging door, permitting better arrangement of furniture, increased area and added decorative beauty.

Homes of every type use Drapefold Doors for living rooms, libraries, dining rooms, bed rooms, closets and sleeping porches. Adaptable to arched openings.

Stores and shops find numerous uses for Drapefold Doors. They are widely used for beauty parlor booths, fitting rooms, stock rooms, cloak and gown cases, show window backgrounds, etc.

Coverings—Drapefold doors may be covered with any material to harmonize with the decorative scheme. The covering can be detached for cleaning or replacing with new color effects. The folds of the drape covering are held in place at all times whether the door is extended or closed.

Construction Features—The frames of Drapefold Doors are of rigid construction yet so simple in design that they are light. Made from steel tubing and multiple cold rolled steel hinges, they are extremely durable and as the only uprights are the end posts their weight is only a fraction of that of a wooden door.

One of the most important features of Drapefold Doors is that they are a self-contained unit supported from their brackets and *do not require tracks* to hold their alignment.

They swing and fold and may be swung entirely clear of the opening when folded. The door is aligned in the opening either by spring hinges to allow swinging or by a light channel guide attached to the top of the doorway for sliding.

Since no tracks are necessary, Drapefold Doors are adaptable to all types of door casings without special provisions. They can be hung quickly and easily without the expense of hanging and finishing wooden doors.

Drapefold Doors operate at a touch and are silent in operation. They will not warp, sag, or stick. They remain rigid and upright when extended.

Drapefold Doors can be furnished curved to open on any radius and are used on curved walls or across corners where a screen effect is desired.

These new doors embody all the advantages of wooden doors combined with the beauty and grace of lovely drapes. They can be furnished to latch and lock and can be made soundproof if desired.

Installation—Nordell Drapefold Doors are simple to install and can be hung single or double depending on the requirements and size of the opening. Tables below give the standard sizes for both Drapefold and Flutefold Doors. Prices and additional information will be gladly furnished on request.



NORDELL FLUTEFOLD DOORS

Nordell Flutefold Doors are designed for clubs, hotels, churches, schools and halls for subdividing large rooms into smaller units.

NORDELL DRAPEFOLD DOOR SIZES

Single Door Sizes			Double Door Sizes		
No.	Opening, in.	Height, ft.	No.	Opening, in.	Height, ft.
4	Up to 21	Up to 10	24	Up to 42	Up to 10
6	Up to 31	Up to 10	26	Up to 62	Up to 10
8	Up to 41	Up to 10	28	Up to 82	Up to 10

NORDELL FLUTEFOLD DOORS FOR LARGE OPENINGS

No.	Open size, ft.	Height, ft.
A	Up to 7	Up to 10
B	Up to 10	Up to 13
C	Up to 20	Up to 25



HORN FOLDING PARTITION CO.

Selfold Partitions—Vertislide Partitions—Soundproof Doors

MAIN OFFICE AND FACTORY
FORT DODGE, IOWA

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TAMPA, FLA.
WASHINGTON, D. C.

Consult telephone directory for our local office in any of the above cities—Should you find it difficult to reach any of our representatives, wire us at our expense. Our organization is built on Service

Products

SOUNDPROOF FOLDING PARTITIONS, VERTICAL SLIDE PARTITIONS and SOUNDPROOF DOORS for Schools, Churches, Auditoriums, Gymnasiums, Hotels, Clubs, Radio Stations, Theaters, etc.



One partition 108x29 ft. dividing gymnasium and one 70x23 ft. on stage. These partitions are soundproof, top hung, electrically operated and have no floor track.

Note: The 108-ft. partition is the largest ever installed.

Junior High School, Washington, Pa.

EDWARD B. LEE, Architect, Pittsburgh, Pa.

FOLDING PARTITIONS

Acoustics (Soundproofness)

Horn Folding Partitions are acoustically constructed, consisting of a series of sheets of Masonite, Flaxlinum, Quartrboard, etc. The varying densities of the different materials make an ideal construction. Transmission and deflection of sound is overcome to such a degree that rooms divided by Horn Partitions can be used simultaneously without interference to either. Faulty acoustics will be materially improved by the use of one of these partitions.

Construction

Horn Folding Partitions are top hung, requiring no unsightly, bothersome, rubbish catching floor tracks or grooves. This detail makes possible the construction and maintenance of beautiful, unmarred floors. Specially designed, four wheel Horn roller bearing hangers insure easy operation of the partitions. Automatic rubber floor stops effectively seal the space at the floor line. This requires no attention on the part of the attendant. One flush bolt on each section holds the partition firmly in place.

All partition sections are made of solid fir stiles and rails. This material is first quality edge-grained and is milled especially for use in Horn Partitions. No knots or pitch pockets are allowed. This solid construction is far superior to the glued up stiles commonly used, since it eliminates all possibility of defective glue joints. No scrap woods can be used in our solid construction. The tensile strength of vertical grained fir is surpassed in no other wood, and no Horn partition has ever warped out of shape.

Continuous corkboard and natural slate blackboard with chalk rails can be furnished as needed. Where desired, a Met-L-Wood wainscot can be used as a definite part of the construction. A pass door opening through the partition can be installed in any section. Recesses may be used, into which the entire partition will fold. These can be closed by specially designed doors which function regardless of the position of the partition.

Operation

All Horn Folding Partitions are mechanically operated by one of the three following methods:

1. Motor Operation—Motor operation is recommended only for the larger folding partitions. This method of operation is the latest design, consisting of a Synchro Screw Drive which is being patented. The Synchro Screw Drive is positive in action and is guarded by special safety equipment to compensate for overload and emergencies. The safety equipment is entirely electric, and therefore, positive. No cables or chains are used in the entire mechanism. For details consult Detail Sheets 1 and 2.

2. Hand Operation (Cable)—Hand operation is recommended for partitions too small for motor operation. The cable drive has been developed by Horn engineers, and is the most efficient and safest method of hand control. The cable is adjusted so that it will slip on overloads, and is, therefore, more favorable than the chain method for use on the hand operated partition. The action is smooth and noiseless.

3. Hand Operation (Chain)—For those desiring a cheaper method of operation than the two before mentioned, we would suggest the chain drive. Due, however, to the positive drive, no safety equipment can be used. Chain drives are more noisy and less desirable, and should only be used where price is the deciding factor.

Guarantee

Horn Folding Partitions are guaranteed for a period of five years against faulty parts and workmanship. This liberal guarantee is possible since all materials are manufactured in the Horn factory and installed only by Horn installing engineers.

Cost

The cost of a fine Horn Partition is commensurately low. Prices will be quoted upon request.

Description of Folding Partition Types

Type A—The Type A partition is recommended for gymnasium, auditorium, and class room work. Both sides are flush, being covered with a heavy roll duck. The acoustic construction makes it the most soundproof of any type we manufacture. Wood battens are placed every six or seven feet, depending on the height of the partition. These battens help to bring out any decorative harmonies desired. The duck surface may be decorated to match the surroundings.

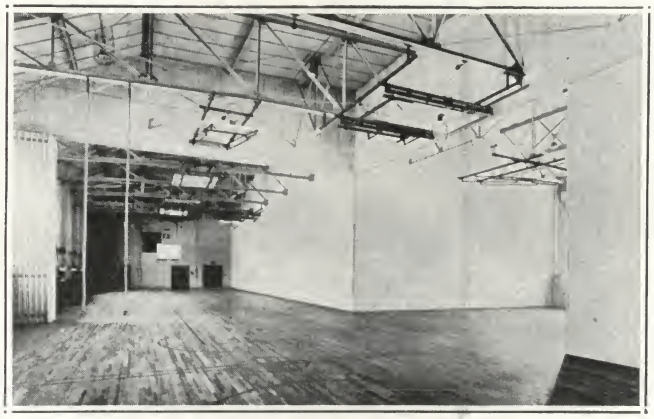
Type AW—If wood panels are preferred to the duck surface, specify Type AW, which is nearly the same in acoustic qualities but has the outward appearance of a wood partition.

Type AM—If a metal wainscot is desired, specify Type AM. This type consists of the standard A type with Met-L-Wood placed on both sides to a height of about six feet. This type is winning favor for use in gymnasiums.

Type SA—The prefix S signifies Slate and can be had on any type. Thus Type SA means Type A with blackboard on one side. For two sides, use the prefix SS.



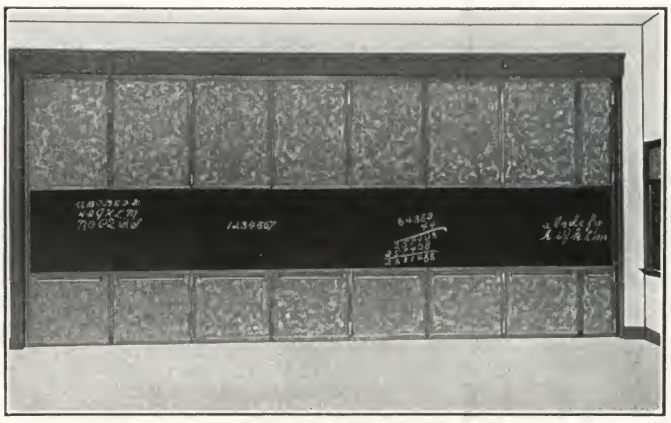
Type B Partition 78x20 Ft. Separating Auditorium and Gymnasium
Note the Type A partition in the background



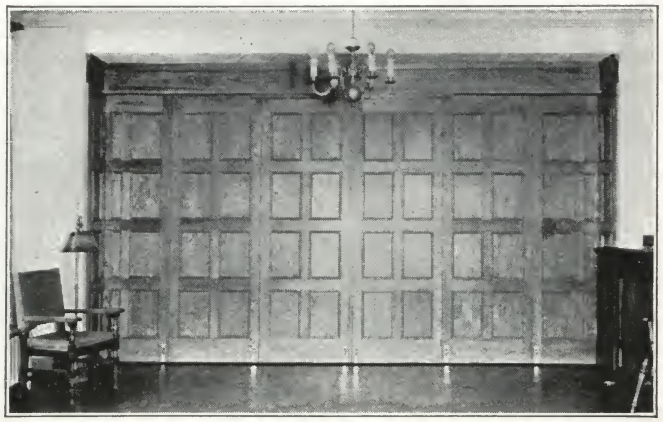
Walnut Hills School, Cincinnati, Ohio
GARBER AND WOODWARD, Architects, Cincinnati
One Type A partition 151x21 ft. One Type A partition 80x21 ft. These partitions intersect, making four separate gymnasiums

Type C—This is an acoustic wood partition, designed to harmonize with interiors which do not readily adapt themselves to the foregoing types. This partition consists of double panels with acoustic material between. It is far more soundproof than an ordinary wood door. It can be made of any standard cabinet wood. The height must be limited to fifteen feet, as no satisfactory veneer work can be done in heights greater than this. Type C partitions can also be equipped with blackboards.

Type D—This type consists of a series of slab doors hinged and operated like other types of Horn Partitions. It is used where soundproofness is of no value, and merely a means of division is desired. This type is also limited to a height of fifteen feet.



Type SA Partition 24x11 Ft. Dividing Two Classrooms
Note the smooth continuous natural slate surface. Blackboard may be had on any type



Type C Partition Dividing Club Room in St. Francis House at Madison, Wis.
ESCHWEILER & ESCHWEILER, Architects, Madison

Type B—This type has been developed almost exclusively for combination auditorium-gymnasium use. The auditorium side is paneled in any arrangement desired, the panels being covered with an attractive art cloth. This partition is also soundproof and rooms thus separated may be used simultaneously without interference to either. Wood panels can be substituted for the art cloth but it is not recommended on account of the great sound deflection. Wood doors fundamentally are not soundproof unless the inner cores are of acoustic material. The gymnasium side is surfaced with roll duck, the same as Type A. With this type of partition, the maximum use can be made of the auditorium-gymnasium combination.

Type E—The Type E Partition consists of single panel doors with no soundproofness. Until Horn soundproof partitions were developed, Types D and E were used exclusively. We list them here in order to show our complete line. Type E is the least in cost of any type we manufacture. Whichever type is specified the client may be assured of the finest in workmanship and materials.

Special Types—If none of our standard types meet your exacting conditions, we shall be glad to have you work with our engineering department to develop a type which would best suit your individual case. There is no obligation for this service.



Type E Partition, 15x10 Ft., Hotel Wahkonsa, Fort Dodge, Iowa
Used to separate private dining rooms



Type A Partition, 86x24 Ft., High School, Springfield, Mo.
The bleachers are not cut where partition occurs

FOLDING PARTITION SPECIFICATIONS

(*Note:* It is advisable to keep the folding partition specifications separate from those for millwork.)

Folding partitions, as shown on the plans, shall be Horn Selfold Partitions, manufactured, completely installed and guaranteed by the HORN FOLDING PARTITION CO., Fort Dodge, Iowa.

Partitions shall be Type .. (A for example), constructed as shown on the Horn standard detail sheets. All casings and track enclosures shall be back painted. (Where Types A, AM, or B are specified, add, "All duck covered surfaces shall receive one coat of filler at the factory.") No other painting or finishing shall be required in the partition contract.

Complete installation shall consist of the following: all partition units, track enclosures, wall jambs, and the necessary finish trim; all partition hardware including overhead tracks, four-wheel roller bearing hangers, Horn mechanical operating device (insert here whether Synchro Screw Drive, cable drive or chain drive is to be used); all freight and drayage charges; and all labor for installing the partition. (If electrically operated, add, "The Synchro Screw Drive shall also include the necessary motors, switches, automatic shut-offs, A.C. mechanical contactor, and wiring leading from 220-volt outlets, conveniently placed for connection with the motors.)

The bottom of each section shall be fitted with automatic floor stops to effectively seal the space between the partition and the floor, these stops to be entirely automatic, having no levers or other adjustments.

There shall be no floor track, each section being held in place by means of a heavy flush bolt, engaging into a socket, neatly inlaid in the floor.

The HORN FOLDING PARTITION CO. shall guarantee the materials, workmanship and operation of these partitions for five years from the date installation is completed. The guarantee shall include free servicing of the partitions and free replacement of faulty parts, should either become necessary.

Note: To avoid misunderstandings, all plans must show plainly the width and height of the folding partition, as follows: Width extends from outside to outside of wall post and therefore includes the depth of the recess. Height extends from finished floor to top of our track plank.

Vertislide Partitions

The Horn Vertislide Partitions are used chiefly on theater stages and between auditoriums and gymnasiums in schools. They are counter-balanced and electrically operated. The entire partition is raised into the stage loft which must be the height of the partition itself. These partitions are soundproof, and may also be fireproofed. The surface permits easy decoration. Since every application is a special problem, we would ask you to permit our engineering department to make suggestions for the best possible layout. There is no obligation whatever.

Free Service to Architects

The Horn designing department offers a free service without obligation. All inquiries are welcomed and will be served in the best manner possible from the main office, or from one of our many branch offices.

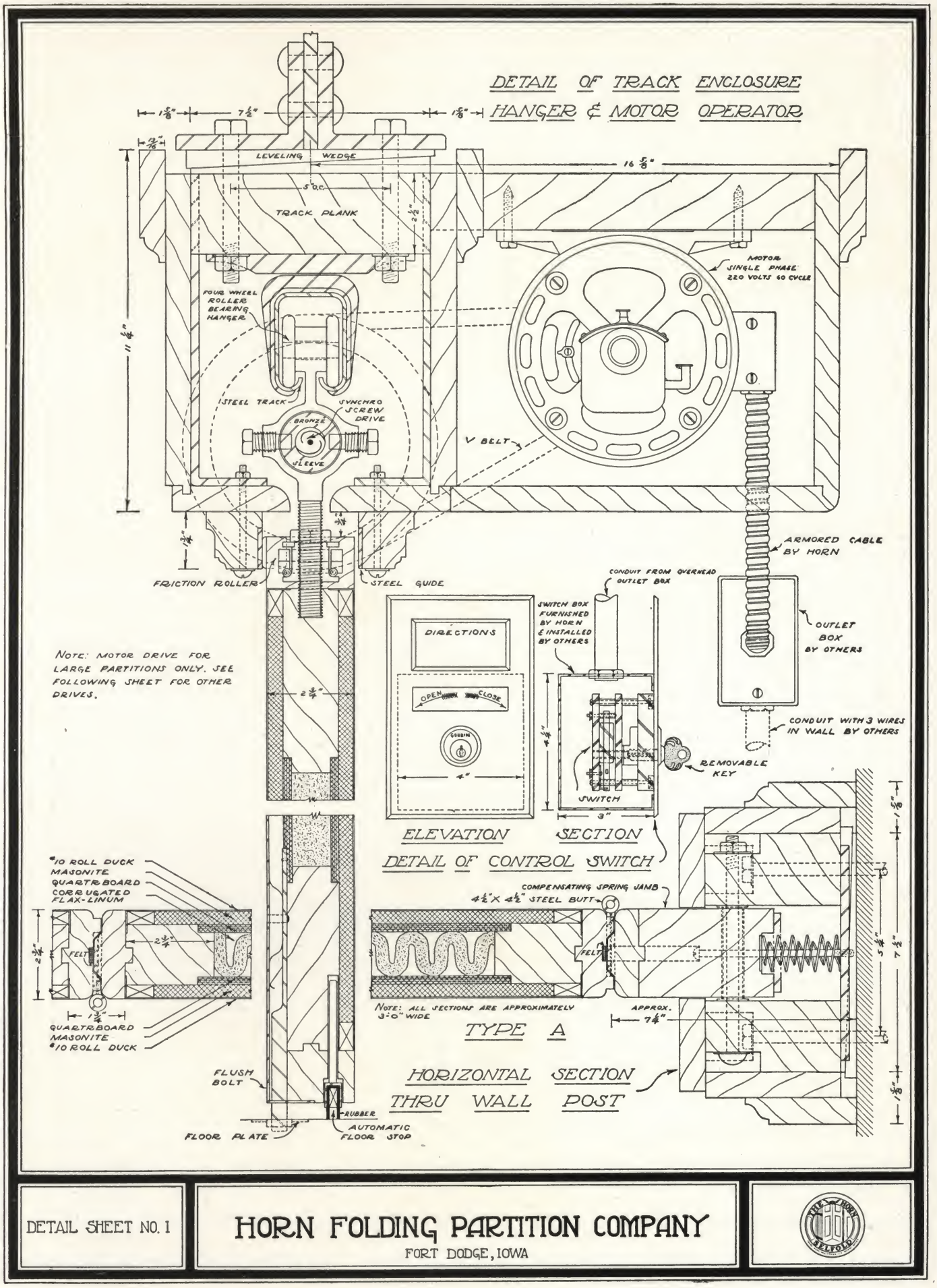


Horn Soundproof Door
3x7 Ft.
Furnished complete as shown with all jambs and hardware

Soundproof Doors

Horn Soundproof Doors have been developed for use in hospitals, music rooms, study rooms, offices, radio stations, etc., where positive soundproofness is essential. The acoustic construction is the same as is used in the soundproof Horn Folding Partition. Side and head jambs with gaskets and other insulation are furnished with the doors to guarantee perfect soundproofness. Locks and hinges are also furnished. The standard Soundproof Doors are covered with Fabrikoid—color, texture and trim as desired. Details and sizes can be changed to meet any special requirements. Further information and prices will be furnished on request.

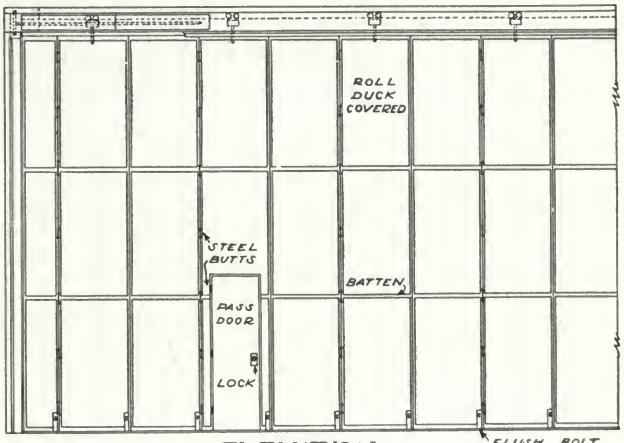
See details on following pages.



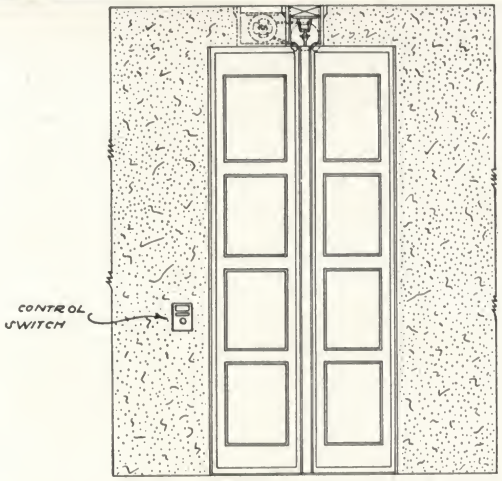
DETAIL SHEET NO. 1

HORN FOLDING PARTITION COMPANY

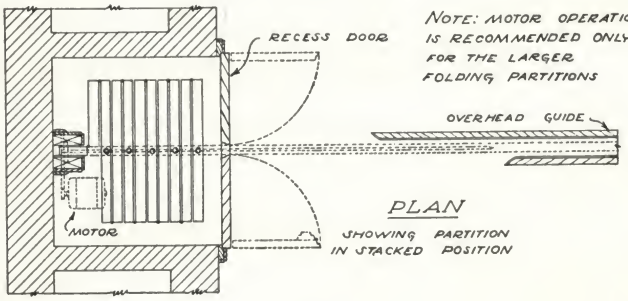
FORT DODGE, IOWA



ELEVATION

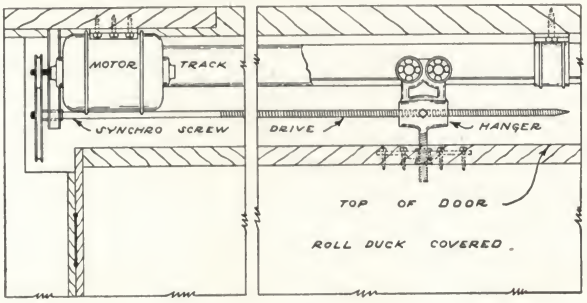


ELEVATION RECESS DOORS

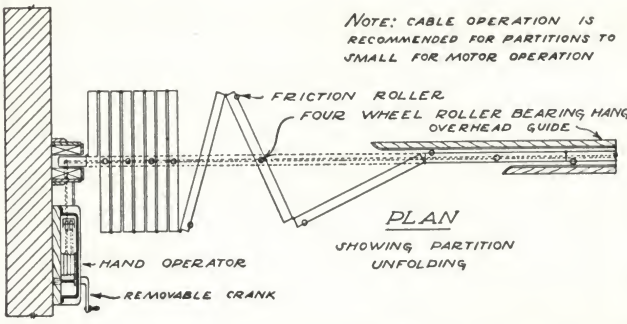


NOTE: MOTOR OPERATION IS RECOMMENDED ONLY FOR THE LARGER FOLDING PARTITIONS

PLAN
SHOWING PARTITION IN STACKED POSITION

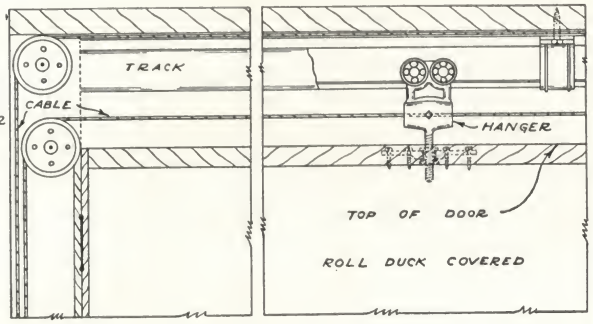


SYNCHRO SCREW DRIVE

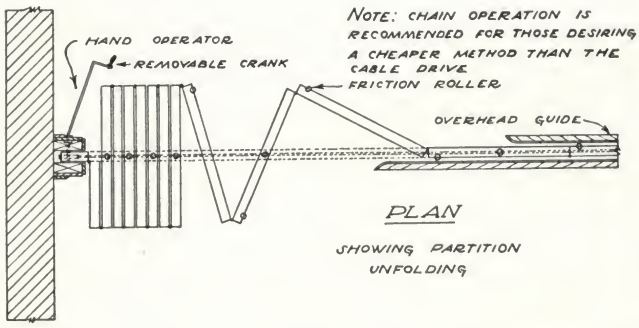


NOTE: CABLE OPERATION IS RECOMMENDED FOR PARTITIONS TO SMALL FOR MOTOR OPERATION

PLAN
SHOWING PARTITION UNFOLDING

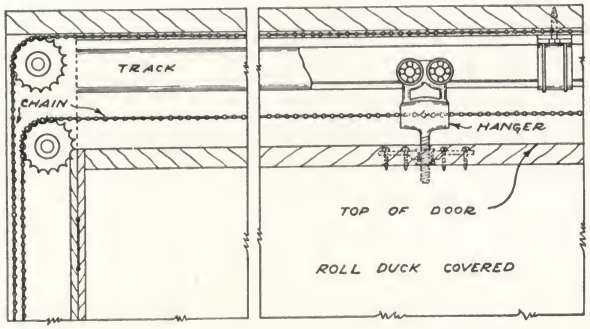


CABLE DRIVE



NOTE: CHAIN OPERATION IS RECOMMENDED FOR THOSE DESIRING A CHEAPER METHOD THAN THE CABLE DRIVE

PLAN
SHOWING PARTITION UNFOLDING

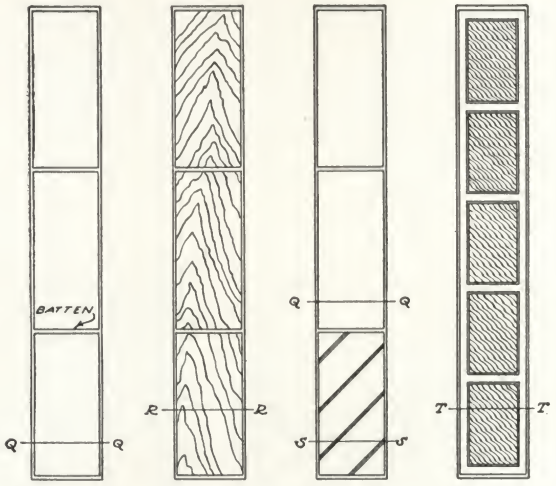


CHAIN DRIVE

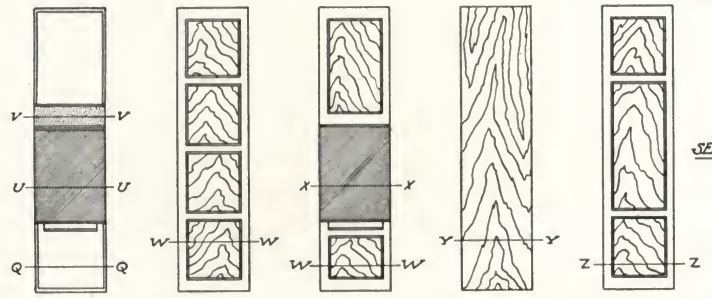
DETAIL SHEET NO. 2

HORN FOLDING PARTITION COMPANY

FORT DODGE, IOWA



TYPE A - TYPE AW - TYPE AM - TYPE B



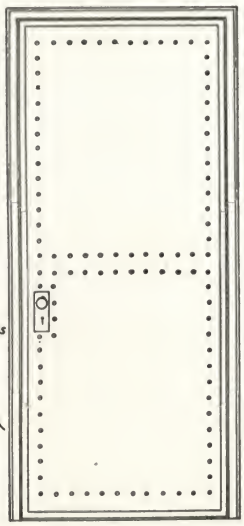
TYPE SA - TYPE C - TYPE SC - TYPE D - TYPE E

CODE

A = FLUSH
B = PANEL ONE SIDE
C = ACOUSTIC WOOD PARTITION
D = SLAB PARTITION
E = SINGLE PANEL PARTITION
PREFIX - S = SLATE ONE SIDE
SUFFIX - W = WOOD
SUFFIX - M = MET-L-WOOD

SOUNDPROOF DOOR

USED IN SCHOOLS, CHURCHES AUDITORIUMS, GYMNASIUMS, HOTELS, CLUBS, RADIO STATIONS, STUDIOS, ETC.



ELEVATION



PLAN

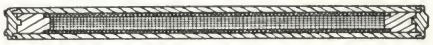
SECTION QQ



TYPE A

FLUSH TYPE. ROLL DUCK TWO SIDES. WOOD BATTENS APPROXIMATELY EVERY 7'-0".

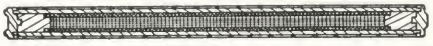
SECTION RR



TYPE AW

FLUSH TYPE. WOOD PANELS TWO SIDES. WOOD BATTENS APPROXIMATELY EVERY 7'-0".

SECTION SS



TYPE AM

SAME AS TYPE A WITH MET-L-WOOD WAINSCOTING APPROXIMATELY 6'-0" HIGH.

SECTION TT



TYPE B

ACOUSTIC PANELS ON ONE SIDE COVERED WITH ART CLOTH. OTHER SIDE SAME AS TYPE A. RECOMMENDED IN AUDITORIUM AND GYMNASIUM WORK

SECTION UU



TYPE SA

TYPE A CONSTRUCTION BUT EQUIPPED WITH NATURAL SLATE BLACK BOARD FLUSH WITH SURFACE. CAN BE MADE ON ONE OR TWO SIDES.

SECTION VV



TYPE SA SPECIAL

SAME CONSTRUCTION AS UU EXCEPT THAT ¼" CORK. BULLETIN BOARD IS USED ABOVE SLATE.

SECTION WW



TYPE C

ACOUSTICALLY CONSTRUCTED WOOD PARTITION CONSISTING OF WOOD PANELS WITH ACOUSTIC MATERIAL BETWEEN.

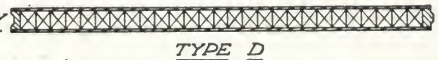
SECTION XX



TYPE SC

SAME AS TYPE C EXCEPT EQUIPPED WITH NATURAL SLATE BLACK BOARD SET FLUSH WITH SURFACE.

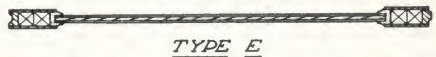
SECTION YY



TYPE D

1¾" SLAB PARTITION - CONTAINS NO ACOUSTIC PROPERTIES.

SECTION ZZ



TYPE E

SINGLE PANEL WOOD PARTITION. CAN BE HAD IN ANY PANEL ARRANGEMENT. NO ACOUSTIC PROPERTIES.

DETAIL SHEET NO 3

HORN FOLDING PARTITION COMPANY
FORT DODGE, IOWA

NEWCASTLE PRODUCTS, INC.

Manufacturers of Circle A Sectional Partitions, Bank Screens, Paneling Wardrobes, Folding Partitions, Rolling Partitions, Soundproof Partitions

654 South 25th Street
NEWCASTLE, IND.

NEW YORK, N. Y., 17 East 42nd Street
BRANCH OFFICES IN PRINCIPAL CITIES

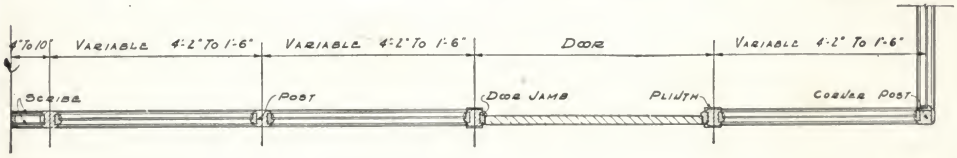
Circle A Sectional and Movable Partitions

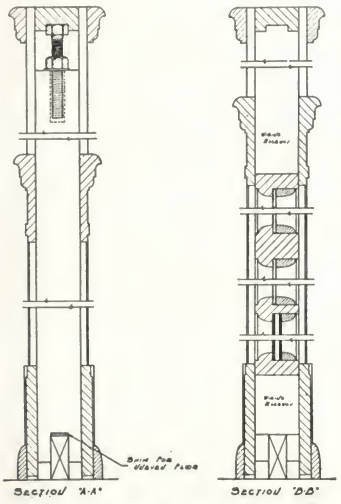
Built in units for construction of dividing walls or railings—suitable for subdivision of virtually every type of space. Walls can be solid panel or glass.

Design—Imperial is a dignified, simple design. All ornate detail has been avoided. This partition lends tone to any interior. Other designs are obtainable. Partitions, railing and paneling provided in styles to suit any requirements.

Wood—Available in carefully selected and seasoned American walnut, oak, mahogany, birch. Other woods supplied on special order.

Simple Assembly—All units assembled before shipment. Erection is fast—requires no skilled labor. Tongue and groove construction provides exceptional rigidity. These walls can be taken down without damage—moved and re-erected to fit new office layouts.





Sectional View Imperial Partitions

Standard Units—Include railing, and partitions in 7-ft. or ceiling height. Paneling for board rooms and executive offices provided to order. Cabinet work is the finest—by craftsmen of long experience.

Durability—Circle A Partitions are easily kept in good condition. There is no "surface finish" to crack or peel. Special kick and mop-proof base maintains its good appearance.

Catalogue—Write for file catalogue giving drawings and specifications.

Users—Some of the users of Circle A Partitions:

Remington Typewriter Co.; Pratt & Whitney; National Folding Box Co.; Western Clock Co.; Westinghouse Lamp Co.; New Jersey Bell Telephone Co.; Governor Clinton Hotel; New York Trust Co.; Gimbel Bros.; J. C. Penney Co.; Kroger Grocery; Ohio Brass Co., and many others.



Imperial Railing and Partition—Wiring Concealed in Base and Posts



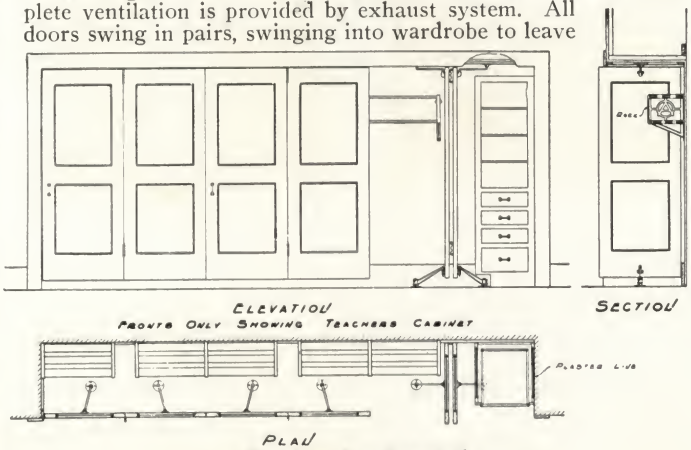
Glass Paneling Provides Light for Hallways



Ceiling Height Partitions for the Directors' Room

Circle A School Wardrobes

Construction Details—Blackboard or corkboard, paneled or flush paneled surfaces are optional. Paneled doors are veneered stiles and rails on built up cores with 3-ply panel. Flush type doors are 5-ply solid panel. Doors are 1⅜ in. thick, 2 ft. width—or wider where required—and 5 ft. 8⅛ in. high. There is 4 ft. or more between doors when opened. Doors fold together so that blackboard surfaces cannot be brushed against. Bottoms are 3 in. from the floor line. Complete ventilation is provided by exhaust system. All doors swing in pairs, swinging into wardrobe to leave aisles unobstructed. Chalk rail is narrow. Special closets may be provided for teachers' storage space. Finest materials and workmanship assure smooth quiet action through years of steady use.



Elevation Pair Operated

Easy Operation—Although doors are exceptionally strong and heavy, ball bearing hardware permits them to be opened at a finger touch. Circle A wardrobes guaranteed for trouble-free operation. Write for catalogue, giving plans and specifications.





School Wardrobe with Blackboard Surface



Folding Doors, First M. E. Church, Evanston, Ill.
TALLMADGE & WATSON, Architects

Circle A Folding Partitions

Three types offer the most complete line on the market. Quietfold and Standardfold types are constructed for overhead support. No floor track is required. Pairfold type is recommended where support of overhead doors would not be practical. Top suspension eliminates all vertical strain in doors.

Quietfold—Offers the maximum in Folding Partition efficiency and good looks. Interlocking side rails keep doors in perfect alignment. All mechanism is concealed.

Sound Insulation (Optional)—Is of high efficiency. Inner layers of doors built of rigid frames laminated and cross-banded—with all openings filled with sound-deadening material. Edges between doors lined with felt strips. At floor line, movable felt pad is thrust against floor when doors are extended. It is easily raised when doors are to be folded. This patented feature does not drag on floor.

Standardfold—Equal quality but lighter in weight. Floor bolts are used. *Sound Insulation* is optional. Insulated type has felt strips at edges—insuring sealing against sound and odors. Fabric strip forms connection at floor.

Operation—Continuous roller chain drive in Quietfold and Standardfold type provides smooth, positive action. Nothing can slip or stretch. Operation with hand crank is easy. Crank may be removed for locking doors. Roller bearing hangers insure smooth action. Guide roller prevents jamming, or marring of woodwork. Installations may be equipped with electrical operation and push button control.



Folding Doors, West Side Y. M. C. A., New York, N. Y.
(Wall receiving pocket)
DWIGHT JAMES BAUM, Architect

Pairfold—This type operates on floor track. Guide at top keeps doors in line. Can be locked in any position. Doors have appearance of a solid wall. Option of insulated or non-insulated construction.

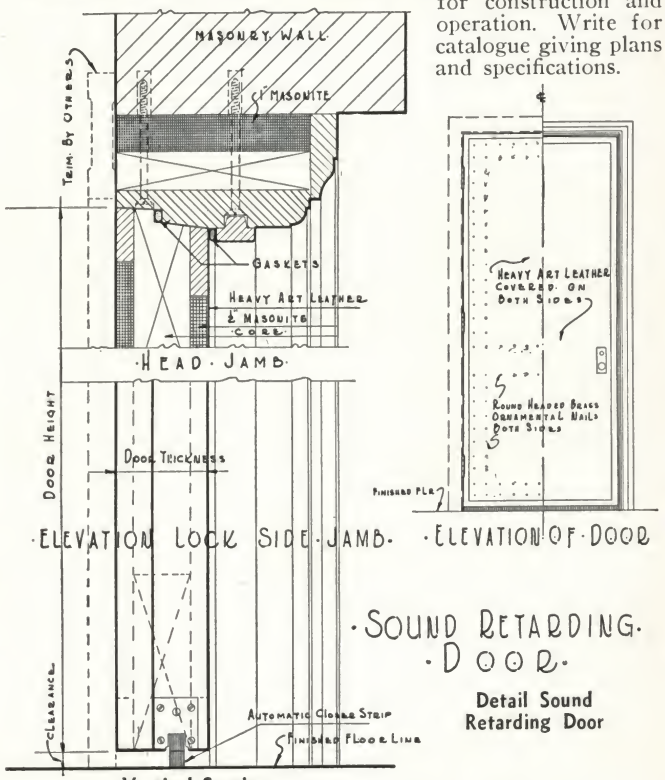
Wall Pocket—For all types of doors, wall receiving pocket can be provided on either or both sides. This permits an unobstructed floor or wall, and an attractive appearance.

Surfaces—Twelve types of surfaces are obtainable on all three folding partitions. These include: Wood panels in any design; and flush paneling; Masonite covered with decorator's cloth. Glass or blackboard surfaces may be obtained. Doors can be made to harmonize with any interior—whether it be club, church, hotel, gymnasium, assembly hall, etc.



Folding Doors, Port Chester, N. Y., High School
TOOKER & MARSH, Architects

Guarantee—All Circle A Folding Partitions are guaranteed for construction and operation. Write for catalogue giving plans and specifications.



Detail Sound Retarding Door

Vertical Section

Circle A Sound Retarding Door

These doors provide high efficiency insulation against sound. They are furnished with side and head jambs, also necessary automatic door closer.

Finished with pantasote leather. Standard size, 3x7 ft. Special doors made to meet special requirements. Thickness to size specified. Construction similar to Quietfold doors.

Rolling Partitions

These horizontal rolling partitions are highly efficient and mean economical subdivision of space where sound insulation is not required. Design is of the latest type. Construction is strong to give trouble-free operation. Wood slats are threaded on tempered steel bands, running vertically about 18 in. apart. Coil is fitted with tempered balance springs to insure smooth operation.

Felt covering on spring cases protects woodwork against marring.

Manufactured, installed and guaranteed against faulty operation by NEWCASTLE PRODUCTS, INC.

This type of partition has a wide range of uses, as it can be operated in considerably less space than the folding type. Write for literature, plans, and specifications.





Rolling Partitions, Baptist Church, Big Springs, Tex.
J. B. MOORE, Architect

RICHARDS-WILCOX MANUFACTURING CO.

INCORPORATED

Manufacturers of "FoldeR-Way" Partitions

AURORA, ILL.

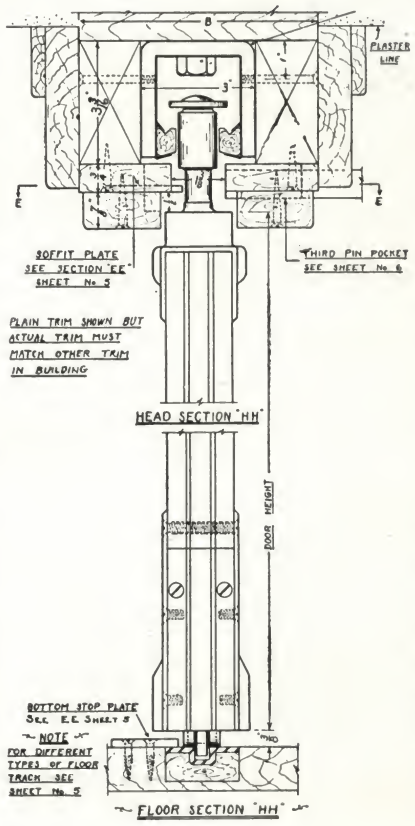
BRANCHES IN ALL PRINCIPAL CITIES

For R-W Other Products, see Manufacturers' Index

R-W NO. 535 "FoldeR-Way" TYPE PARTITIONS

Description

The No. 535 Principle of Operation involves the handling of partition doors in pairs, each pair being hinged together with butt or invisible hinges and operating as an independent unit. The entire weight is carried on the floor track, the upper track serving only as a lateral guide. This principle, applicable only to manually operated sets, is correct, simple, and universally accepted as a Standard of Quality and Performance. It is readily applied to both large and small openings in old and new buildings alike where one room must, of necessity, serve the purpose of two.



Specifications

Operating Hardware—Shall be one of the classes described below:

Class "A"—All exposed hardware, except floor track, is solid brass or bronze, finished as specified. Top pivots and bottom pivots are made of steel, brass or bronze plated. Guide tracks, jamb springs, guide track knees are finished black, steel floor track natural finish. Furnished with invisible hinges.

Class "B"—Class "B" hardware is the same as Class "C" except that the hinges and bottom roller side plates are of steel, brass or bronze plated. The top guides, flush pulls, flush bolts, and other parts which are usually of malleable iron are furnished in solid brass or bronze.

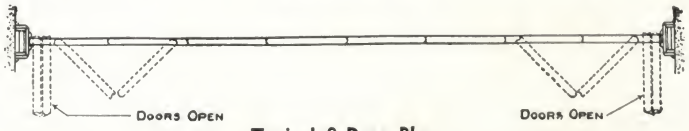
Class "C"—All exposed hardware is of malleable iron or steel furnished in dead black baked finish. Furnished with butt hinges only.

Class "D"—Same as Class "C" except has invisible hinges instead of butts.

Doors—Standard doors shall be from 1¾ in. to 3 in. thick inclusive, and shall be wood veneered, duck-covered, or kalamein-covered. (See illustrations on next page.) All wood doors of panel design shall have built-up stiles and rails with ¼-in. thick sawed veneer keyed to the core with not less than four tongues and four grooves per inch. All stile and rail joints shall be mortised and tenoned. Duck-covered doors are constructed of flush celotex panels reinforced with plywood as detailed. Kalamein-covered doors are covered with 22-gauge kalamein metal and are primed one coat at the factory. Wicket doors, soundproof floor strips, and additional soundproofing furnished as specified. All wood doors shall be hand or belt smoothed and free from cross grain sander scratches.

Trim—Finished trim shall be standard or as detailed by the architect.

Installation—The entire partition, consisting of hardware, doors, and trim shall be furnished, installed, and guaranteed by RICHARDS-WILCOX MANUFACTURING CO. Rough bucks and filling, staining and painting (except as noted) shall be by others.



Typical 8-Door Plan





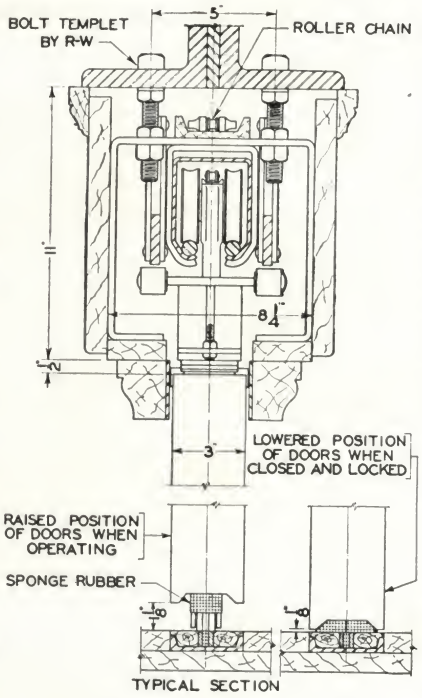
NO. 888 FULLY AUTOMATIC ELECTRIC "FoldeR-Way" PARTITION

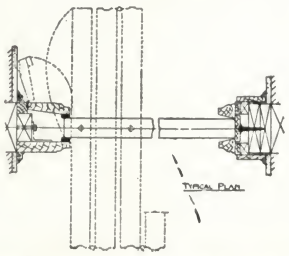
Description

Just as the No. 535 Type equipment is the leader in its field, so the No. 888 Type Fully Automatic Electric Partition stands first in the field of the suspended or overhead-hung type. The No. 888 Principle of Operation accomplishes automatic locking and unlocking with remote control from the key switch, thereby eliminating all manual work such as lifting or lowering floor bolts, operating mechanical soundproof floor strips, or manually starting the folding action at the jamb. Since it is merely necessary to turn the switch key, it can be truthfully said that the No. 888 All-Electric Partition is Absolutely Foolproof and is not dependent upon the experience or skill of the individual operating it.

By the correct application of a simple mechanical principle, the No. 888 Fully Automatic Electric "FoldeR-Way" Partition meets a long-felt need and supplies to the field of folding partitions an improvement as notable and outstanding as was the self-starter to the automobile. Its accomplishment can be best summarized by this guarantee of perfect satisfaction: *You Turn the Switch Key—R-W Does the Rest.*

Where Used—Although designed primarily for large gymnasium partitions, the No. 888 Type is equally suitable for smaller openings in churches, offices, funeral homes, and hospitals where silence, soundproofness, and simplicity of operating are essential.





Specifications

Operating Hardware—Shall be Completely Concealed and all doors folding to a single jamb shall be hinged together with invisible hinges. (Butt hinges may be substituted.) The self-aligning supporting hangers shall operate in heavy duty friction-proof track weighing at least 8 lbs. per lineal foot and constructed of No. 9 gauge cold rolled steel with ⅝-in. round cold rolled steel bar runways. The track shall be supported by ⅜-in. thick steel brackets on 4 ft. 0 in. centers.

Hardware shall provide 1⅛-in. space between bottom of partition and floor when opening or closing, but the final closing movement shall cause the entire partition to lower until touching the floor, thereby effectively sealing this space against the transmission of sound.

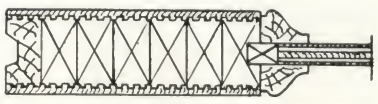
Operating hardware shall include emergency release and crank, electric operator, switches, relays, overload control, lowering mechanism, and automatic locking, unlocking, and folding devices. (Oak guide track with concealed steel channel base recommended for large openings. Track does not contain a dirt-catching slot. Exposed hardware, pulls, floor bolts, and manually-operated floor strips completely eliminated). Electric operation recommended but can be omitted on small openings.

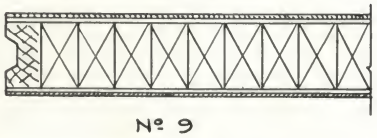
Doors—All doors shall be sound insulated, 3 in. thick, full size and equal width with bottom and vertical edges lined with sponge rubber. Designs No. 10 or No. 10A recommended with built-up cores, ¼-in. thick sawed key veneer, and ¾-in. 5-ply flush panels. Where duck covered doors are desired, the No. 348 3-in. steel channel frame type is recommended. (See illustrations below and Door specifications on preceding page.)

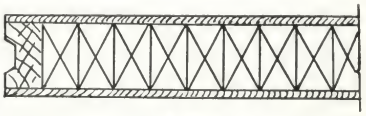
Trim—Finished trim shall be standard or as detailed by the architect.

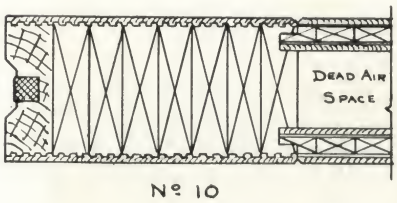
Installation—The entire partition consisting of hardware, doors, and trim shall be furnished, installed, and guaranteed by Richards-Wilcox Manufacturing Co. Rough bucks, electric wiring and outlets, filling, staining, and painting shall be by others. *You Turn the Switch Key—R-W Does the Rest.*

TYPICAL DOOR SECTIONS

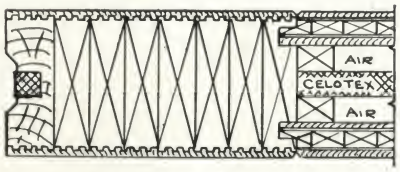

Nos 1 To 8


No 9

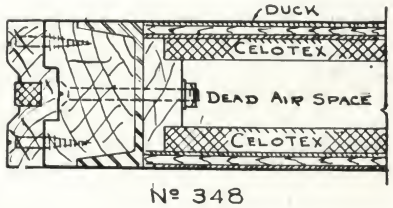

No 9-A



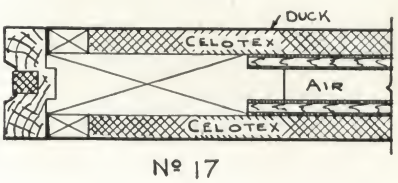
No 10



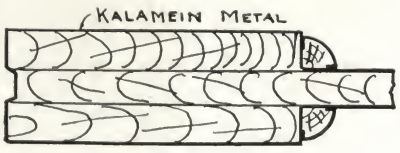
No 10-A



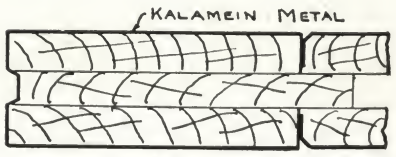
No 348



No 17



No 21 To 28



No 210

R-W NO. 237 "FoldeR-Way" PARTITIONS

Description

The No. 237 Type Principle of Operation is essentially the same as the No. 535 except that the former (No. 237) has the weight of the doors carried by hangers in the upper track; the bottom or floor track serving only as a guide.

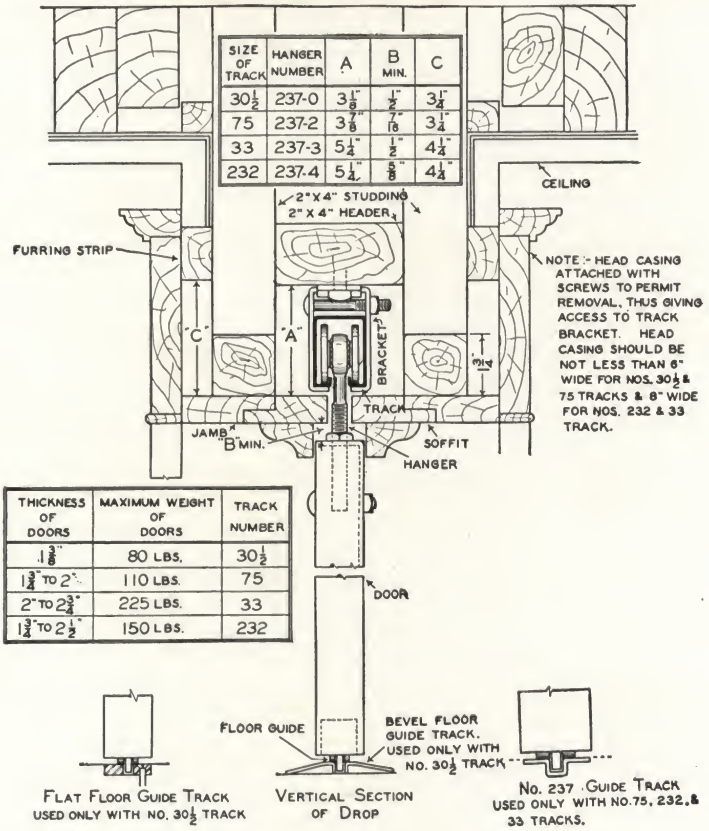
The No. 237 Type is satisfactory for small and medium height doors where moderately priced hardware is desired.

Specifications

Operating Hardware—Four sizes of overhead track are furnished for various weights of doors as shown in the table. Three different types of floor track are illustrated, and flush tracks are furnished unless otherwise specified. Raised beveled tracks may be furnished for 1⅜-in. thick doors if desired. One and one-half pair of hinges and one flush pull are required for each pair of doors. One No. 237 surface bolt is required for each opening when all the doors fold one way. Two required for each opening when doors divide at the center.

The hardware is supplied with exposed parts in three finishes as desired: solid brass or bronze, brass or bronze plated, and dead black baked.

Doors, Trim, and Installation—Same as described under No. 535 Type, second preceding page.



THICKNESS OF DOORS	MAXIMUM WEIGHT OF DOORS	TRACK NUMBER
1⅜"	80 LBS.	30½
1¾" TO 2"	110 LBS.	75
2" TO 2¾"	225 LBS.	33
1¾" TO 2½"	150 LBS.	232

NO. 135 AND NO. 405 "FoldeR-Way" PARTITIONS

Descriptions

The No. 135 Type Principle of Operation involves the use of a half door at each jamb with all doors folding to a single jamb hinged together with butt hinges. This is the true accordion partition, and the weight of the partition is carried from an overhead track with hangers attached to the center line of every second full size door.

The No. 405 Type is exactly the same as the No. 135 except that all doors are full size and of equal width, and the partition is crank operated instead of hand operated. No floor tracks are used with either type unless specified. Invisible hinges may be used if desired.

Specifications

Operating Hardware—The No. 135 Accordion Type includes track, brackets, and hangers as listed in the table, one flush bolt per door, and butt hinges. Flush pulls will be furnished when specified. All exposed hardware can be furnished in solid brass or bronze, brass or bronze plated, or dead black baked finish.

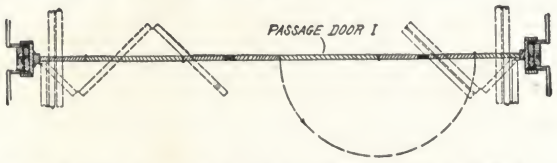
The No. 405 Type includes the heavier track and the crank operating mechanism complete with heavy roller chain operating over ball bearing sprockets.

Doors, Trim, and Installation—Same as described under No. 535 Type, second preceding page.

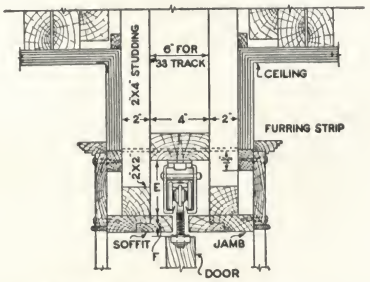
R-W SLIDING ACCORDION FOLDING PARTITION DOOR HARDWARE

Hanger No.	For track No.	Wheels		Thickness of doors, in.	Maximum weight of doors, lb.
		Regular	Bearing		
135–0	30½	Steel	Ball	1⅜	80
135–1	75	Steel	Roller	1¾, 2 & 2¼	110
135–2	33	Steel	Roller	2½	225
*137–0	30½	Steel	Ball	1⅜	80
*137–2	75	Steel	Ball	1¾, 2 & 2¼	110
*137–3	33	Steel	Roller	2¼ to 3	225
405–1	75 or 33	Steel	Ball	1¾ to 2¼	200
405–2	375	Steel	Ball	2¼ to 3	375

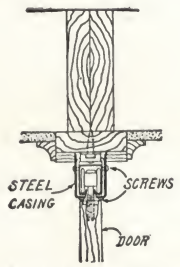
*No. 137 2-wheel hangers are designed for use on each full size door.



Plan of Partition Having 4 Full Sized Doors and 2 Half Doors



Typical Overhead Construction



Alternate Construction



Sliding Accordion Doors

ESTABLISHED 1856

SWEDISH VENETIAN BLIND COMPANY

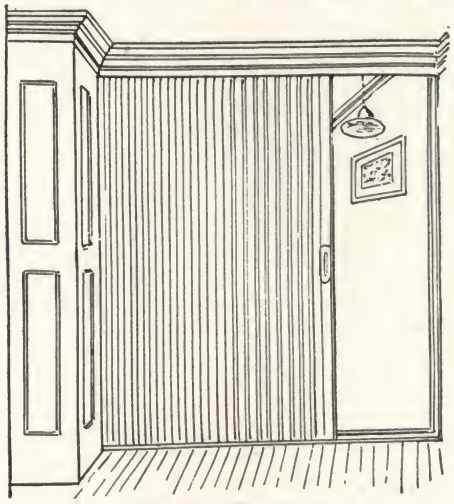
Rolling Wood Partitions and Steel Rolling Doors and Shutters

601 West 26th Street
NEW YORK, N. Y.

For our pages on Swedish Venetian Blinds, see Manufacturers' Index

Horizontal and Vertical Rolling Wood Partitions

For all purposes where room division is necessary; schools, churches, clubrooms, factories, residences, etc.



Vertical Partition

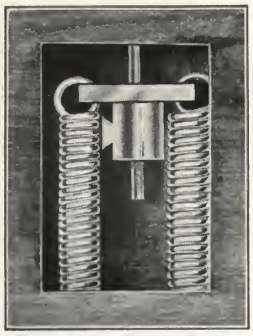
By their use, convenient, economical floor arrangement can be obtained. They dispense with folding and accordion doors.

Made of the best wood obtainable. Slats are 1¾x½ in. and have non-friction joints connected by metal straps.

Improved ball bearing coiling device insures ease of operation and noiselessness. Furnished in any finish desired.

Openings of any width can be closed with one or more partitions. Single partitions should not be over 12 ft. wide.

Detail drawings furnished on request.



Spring in Bottom Bar

DIMENSIONS OF ROLLING WOOD PARTITIONS

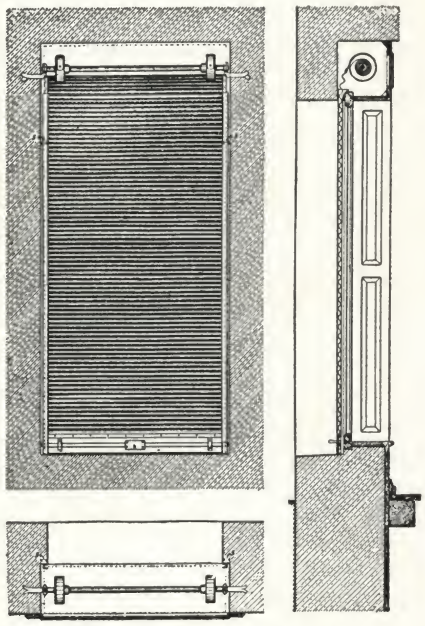
Height, including coil, ft.	Inside of coil box, in. square	Height, including coil, ft.	Inside of coil box, in. square
6	12½	14	14½
8	12	16	15
10	13	18	15½
12	14	20	16

Steel Rolling Doors and Shutters

Made of the best grade of English continuous corrugated steel sheets. Different operating mechanisms furnished to suit varying conditions. Used for all kinds of openings where strength, durability, ease of operation, efficiency and economy of space are required.

Any good mechanic can easily erect our products from details furnished by us.

We have had many years' experience in this line and guarantee a perfect product.

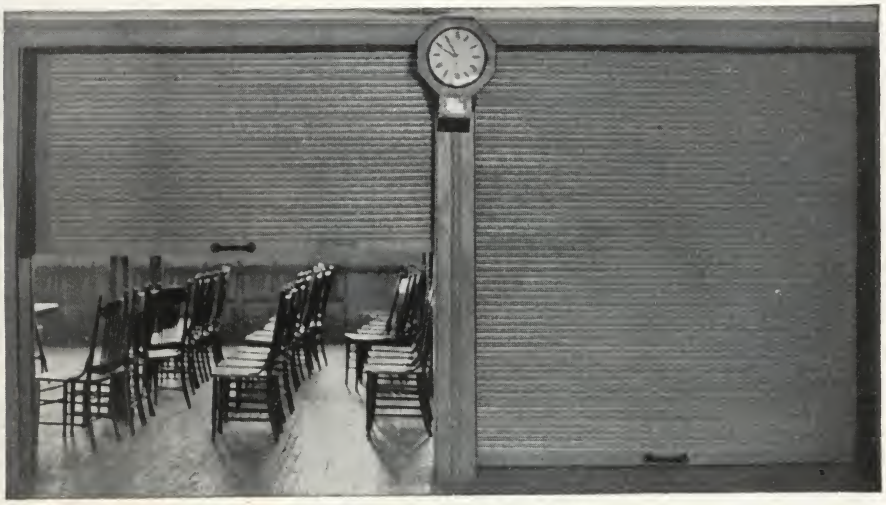


Corrugated Steel Shutter
Hood removed to show operation



Section Through Slats





Typical Installations of Horizontal Rolling Wood Partitions

At left are several sections of rolling wood partitions. For openings wider than 12 ft., movable posts are used as guides between partitions and can be easily detached after partition is coiled away and the two rooms converted into one large space. Spring roller which operates partitions is also shown. At right is the rolling wood partition installed in an assembly room

ESTABLISHED 1876

THE J. G. WILSON CORPORATION

GENERAL OFFICES

11 East 38th Street
NEW YORK, N. Y.

P. O. Box 1194
NORFOLK, VA.

CABLE: "Wilcorp," New York

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BOSTON, MASS., The J. G. Wilson Corporation
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PITTSBURGH, PA., John A. Bricker, Jr.
BALTIMORE, MD., J. M. Butterworth

For Overhead Type and Rolling Doors, and Wardrobes, see Manufacturers' Index

Wilson PARTITIONS

FLOOR SUPPORTED
OVERHEAD HUNG
HORIZONTAL ROLLING

The ease of operation and the permanency of Wilson Partitions are due to the combination of three factors: the highest grade of raw material, in the hands of skilled craftsmen, following practical construction designs.

Products which have given 20 and 30 years of continuous and satisfactory service may well be considered practical for basic design.

On account of these factors, Wilson Partitions have been used successfully for increasing the utility of floor area in schools, churches, and public buildings for the past fifty-odd years.

SECTIONFOLD—Floor Supported

Sectionfold Partitions are substantial in construction, which exemplifies the solidity of appearance they possess, and should not be confused with the so-called "accordion" or overhead-hung partitions. They operate easily and noiselessly. The entire weight of the door is taken on the floor track. The doors are operated in pairs, and not in a large, unwieldy unit.

Sectionfolds do not require special overhead trusses for supporting members. The head guide, or track, is employed only to keep the partition in alignment—preventing lateral movement when it is in a closed position, and providing a means of securing the unique locking feature characteristic of Wilson Sectionfolds.

Careful study of the make-up of Sectionfolds will show that every possible contingency which may occur in the operation of the partition has been guarded against, justifying our claim that there is no comparison between our product and doors hung on ordinary hardware made to imitate the Wilson.



At Left:
Detroit Trust Company, Detroit, Mich.
View of "Sectionfold" Partition dividing directors' room



At Right:
Gymnasium Partitions 28 Ft. High, Ohio State University, Columbus, Ohio

SOME PATENTED FEATURES OF "SECTIONFOLD" PARTITIONS

Head Track, Ratchet, and Pawl

The Wilson head track (A) is only a guide for the ball-bearing swivels, and is employed to keep the partition in alignment and to prevent lateral movement when doors are folded. It carries no weight.

To the track, at the folding end or ends, is rigidly secured the toothed rack (B).

The lead door of each pair is fitted with a pawl (C), an integral part of the swivel (D), engaging the rack immediately the pair is broken out, automatically and positively locking the lead door in a fixed position.

This pawl will not disengage the toothed rack until the pair is again exactly parallel with the head track.

This device, in connection with the safety folding wheel, explained later, insures each pair's being folded and locked in its proper position.

It will be noted that the head track has ample depth for movement of the swivel up and down, to compensate for an uneven floor, or sagging of ceiling.

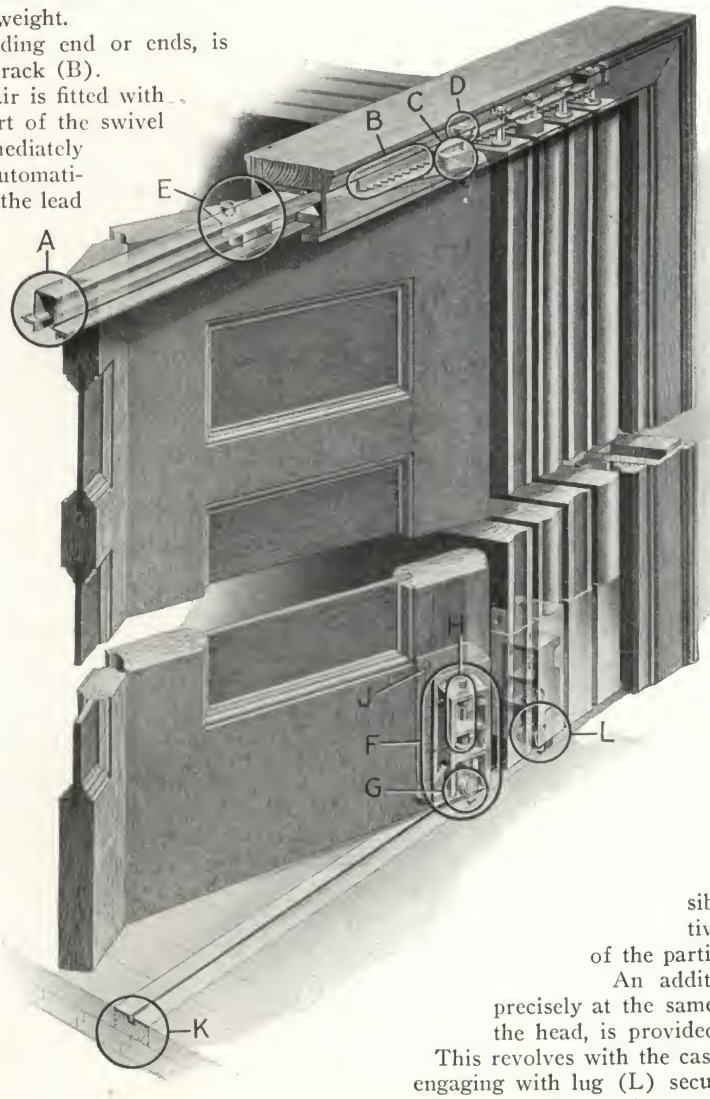
Safety Folding Wheel

Once the doors are in alignment with the track and away from their proper folding position, it is impossible for them to be broken out, eliminating the hazard attending doors that can be folded at any point in the opening.

This is accomplished by the safety folding wheel (E).

This device is fitted to each pair of doors, and is so placed to come directly opposite a bronze slot in the head only when the doors are in their proper folding position.

This insures safety as well as accurate folding of each pair snugly against the other.



Castor and Floor Track

One of the most important parts of the Wilson Sectionfold partition is the castor (F) upon which the entire weight of the doors is carried, and this must necessarily be of thoroughly tested materials.

The ball-bearing wheels (G) with case-hardened outer rim and inner race fitted on either side of the plow at lower end of castor stem are guaranteed to sustain weights greatly in excess of the actual weight of doors on which they are used.

The castor stem in connection with a vertical adjusting screw (H) provides means of raising and lowering the door to meet any unevenness of the floor.

The entire castor is concealed by a bronze cover plate (J) readily removed to provide free access to entire castor mechanism.

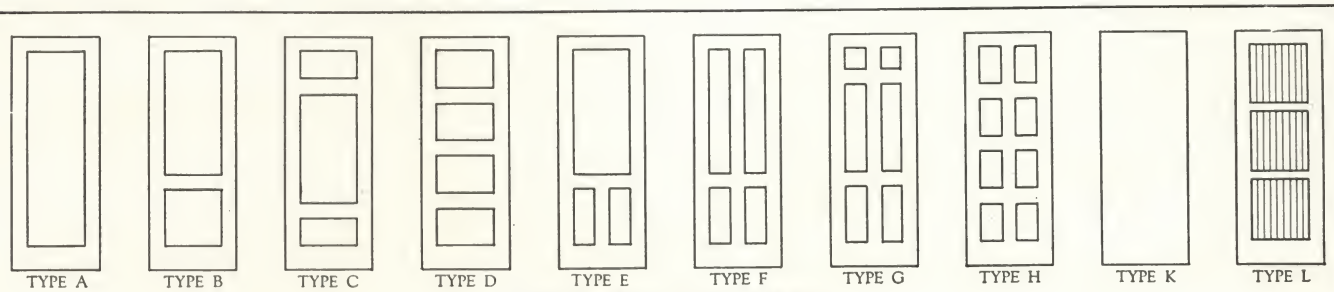
The castor wheels travel on top of the track (K), the plow between the wheels extending into the ¼-in. slot. The plow is fixed and does not revolve; it is, therefore, impossible for it to leave the slot—positively preventing lateral movement of the partition.

An additional automatic lock, functioning precisely at the same moment as the rack and pawl at the head, is provided by the folding finger (L).

This revolves with the castor frame as doors are broken out, engaging with lug (L) securely fastened to top of floor track at folding end or ends.

These exclusive Wilson features are the result of a realization that a Folding Partition operated generally by inexperienced persons must be as fool-proof as a mechanical contrivance can possibly be made.

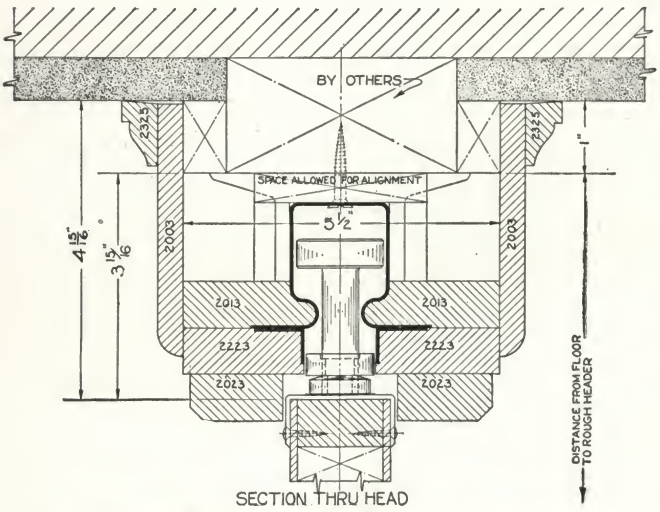
Nothing but wilful abuse will make a Wilson Sectionfold Partition inoperative.



STANDARD TYPE DOORS

NOTE: RAIL IN TYPE L MAY BE OMITTED.
TYPE K NOT RECOMMENDED OVER 11'-0"IN HEIGHT.

DETAILS OF HARDWARE APPLICATION AND MILLWORK FOR SECTIONFOLD PARTITIONS



Standard Details, Wilson Sectionfold Partition

Specifications

Furnish and install where shown on plans Sectionfold Partitions as manufactured by the J. G. Wilson Corporation. Partitions to be made up of doors hinged together in pairs with Soss invisible hinges, mounted on Wilson double ball-bearing, self-cleaning castors fitted with non-revolving plow and locking shoe and means of vertical adjustment, running on cold-rolled steel (or bronze) track fitted with stop lugs. Track groove to be not greater than ¼ in. by ¼ in.

Each pair of doors to be fitted with non-automatic and automatic, self-locking ball-bearing swivels revolving horizontally in Wilson metal head guide, and safety folding wheel to engage slot in head guide at proper point.

Each partition to be provided with suitable length rack at folding end or ends to engage pawl of automatic swivel.

Partitions folding to one side of opening to be equipped with Wilson automatic spring jambs. Partitions of eight doors or more folding to both sides of opening are to be equipped with Wilson spring expansion joints.

Doors to be similar to Wilson Type (....) or architect's detail, (....) in. thick, of (kind of wood), veneered on built-up white pine cores. Panel moulds to be Wilson standard bead and cove design. All necessary track, finished jambs and Wilson standard trim to be included.

Furnish two flush pulls for each pivot pair of doors and one flush pull for every other pair. Furnish one double acting floor bolt for pivot pair only. All exposed hardware to be of solid bronze, polished bright and lacquered.

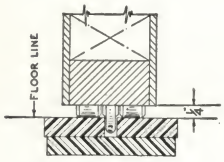
Furnish and install in the white, unfinished, finishing to be done by the painting contractor.

Rough bucks at head and jambs and suitable sleepers or supports to carry track and weight of the partitions are to be set by the general contractor. (See schedule for weights of doors of various thicknesses.)

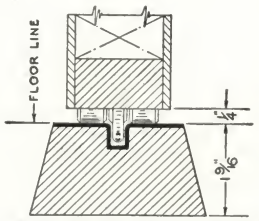
Partitions are to be erected by the manufacturers or under their supervision and to be guaranteed for a period of five years against all defects in workmanship, material and operation.

SCHEDULE OF DOOR THICKNESS AND WEIGHT

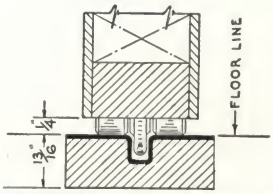
Height, ft.—in.	Thickness, in.	Wt. per sq. ft., lbs.
Up to 11—0	1¾	3 to 4½
11—0 to 13—0	2	3½ to 5¼
13—0 to 15—0	2¼	3¾ to 6
15—0 to 18—0	2½	4 to 6½
All over 18—0	3	4¾ to 8



TRACK FOR HEAVY DOORS



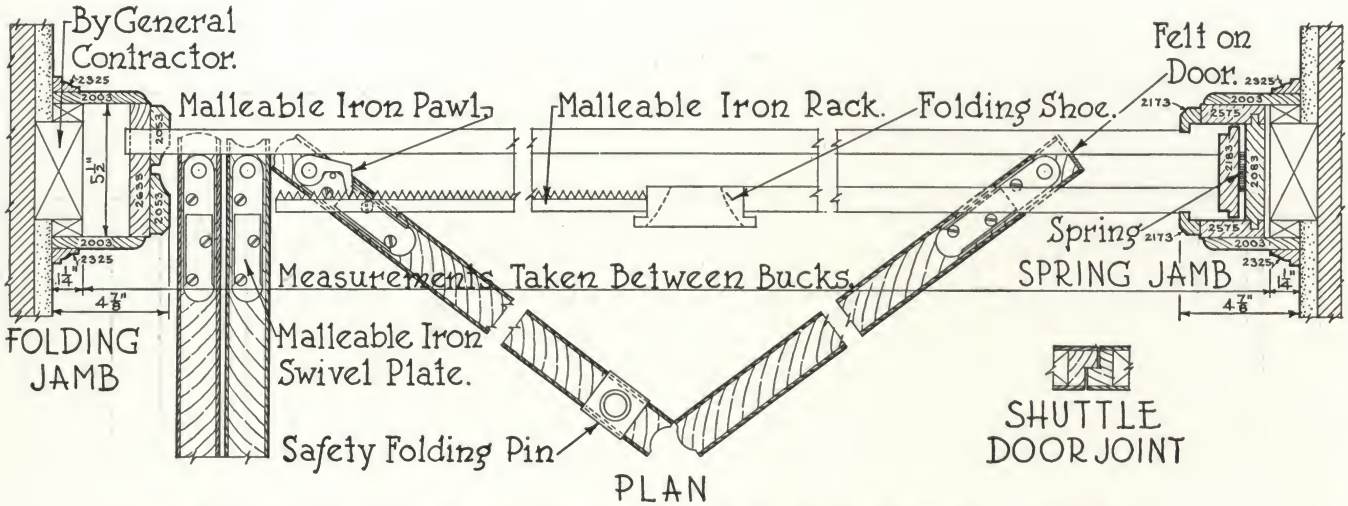
USED IN CONJUNCTION WITH CONCRETE



USED IN CONJUNCTION WITH WOOD

Engineering Service

The facilities of our Engineering Department are at your disposal for the solution of any complicated installations.



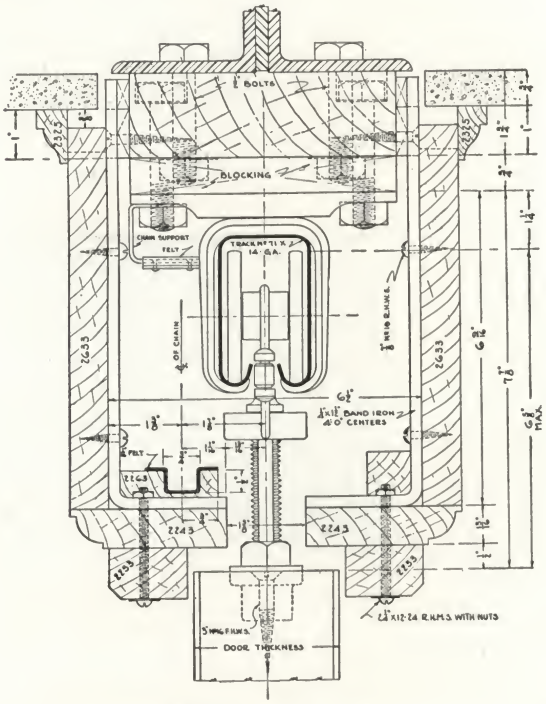
Showing Control Mechanism and Safety Folding Pin.

MULTIFOLD—Overhead Hung

This partition has just recently been developed to meet the needs in churches and small auditoriums where an inexpensive, sound-retarding partition of canvas-covered doors will suffice.

The Multifold Partition is a relatively inexpensive partition of light construction—the entire weight of the doors being carried overhead on a roller-bearing, four-wheel trolley.

This partition can be furnished with a small, inconspicuous floor track—used only as a guide to keep the doors in alignment when traveling across the opening—or with floor bolts in every other door.



SECTION THRU HEAD

Mechanically Operated Multifold Partition

Recommended Floor Track

We strongly recommend the use of the floor guide or track for the following reasons:

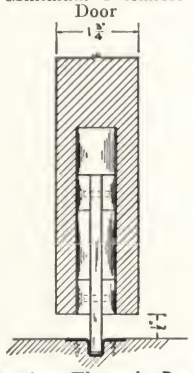
(1) It holds the doors in a true position, preventing side sway during the travel across the opening. (Sway will weaken the head connections.)

(2) It eliminates the nuisance and inconvenience of closing all the floor bolts after opening the partition, and raising the same before closing.

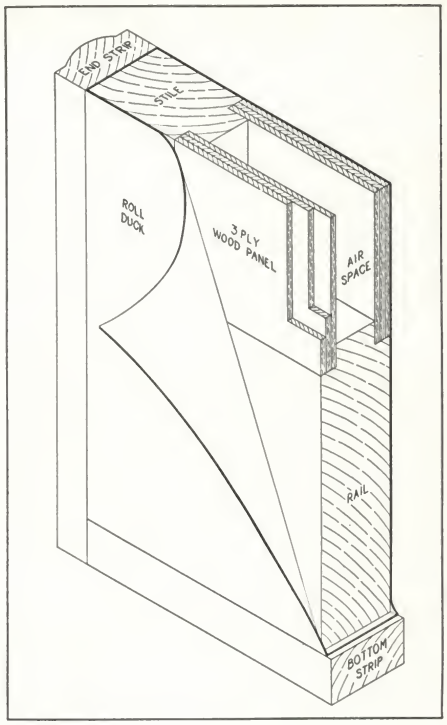
(3) It eliminates the danger that may result should a person carelessly fall against the partition when, through neglect, the floor bolts have not been put into place.

Due to the fact that the weight of the partition is concentrated and carried on the track above, it is more easily adaptable to use with a crank, or motor operation, if required.

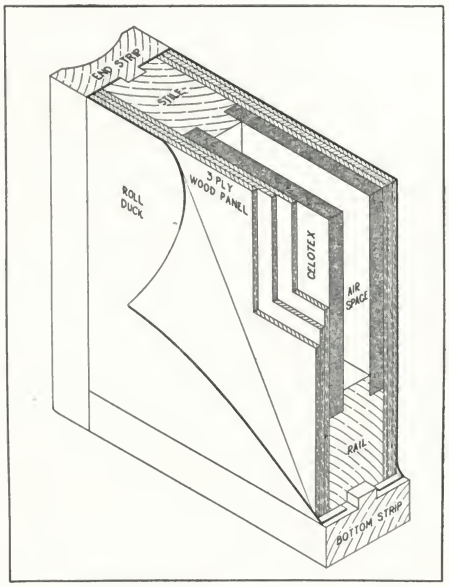
Full details will be furnished upon request.



Section Through Door Showing Automatic Stabilizer



Wilson Standard Canvas-covered Door



Wilson Sound-retarding Door
Minimum thickness 2¼ ins.

ROLLING PARTITIONS—Horizontal

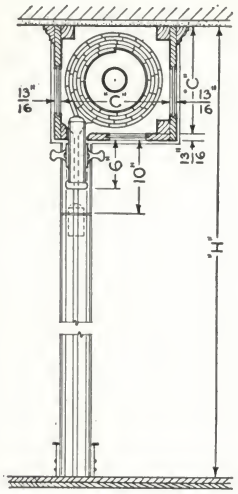
When a particular purpose must be economically accomplished, Wilson Rolling Partitions will be found superior to every other means. The simplicity of construction and design and the lack of mechanical contrivances assure perfection in operation for many years, with no maintenance cost.

Wilson partitions today are made with the same exacting care and quality of materials as during the last half century, and many installations 30 to 40 years old are giving the same satisfaction today as when installed.

The uses of these partitions are unlimited. Little or no provisions need be made for their installation.

The outstanding success of Wilson Rolling Partitions is due to the method of assembling the slats which make up the curtain. Continuous steel bands pass through the slats and anchor into the bottom bar with special spiral spring anchors, allowing for expansion or contraction due to atmospheric conditions—as well as elongation created through the revolving movement. Tension on these springs can be adjusted so that slats will be at all times in close contact.

ROLLING PARTITIONS—Horizontal (Continued)



SECTION AT REMOVABLE POST

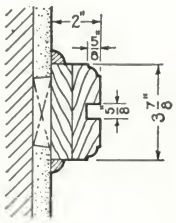
The Wilson Horizontal Rolling Partition is exceptionally easy to operate, and its ease of operation is accomplished by the same tried method that has been used so successfully on all heavy commercial rolling steel doors: an oil tempered spring concealed in the shaft with a convenient means of adjustment. The curtain slats are attached to this shaft. The shaft is commercial black iron pipe, of sufficient diameter to prevent undue deflection, and is fitted with self-lubricating bearings revolving on machined journals attached to supporting brackets. No lubrication other than is ordinarily provided is ever necessary.

These partitions are readily adapted to kitchenettes, or small modern apartments, bed-closets, etc., where such equipment can be effectively concealed. The coil of the Rolling Partition being overhead and out of the way, provides clear, unobstructed room space.

Clothes presses, linen closets, wardrobes, and the like can be built into otherwise limited spaces and closed by Wilson Rolling Partitions, where swinging doors are not practical and where harmonious treatment is desired.



Kitchen



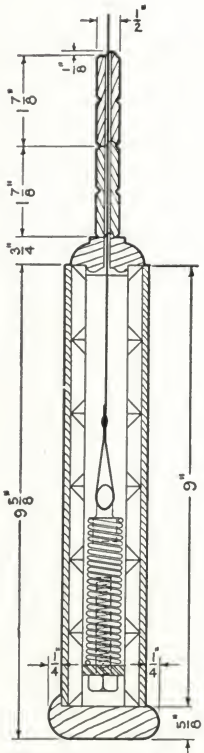
DETAIL OF JAMB



School



Church



SECTION THRU BOTTOM BAR

Showing anchor spring that provides automatic adjustment for shrinkage of slats.

SCHEDULE

Opening height, ft.—in.	Dimension "C," in.
3— 3	9
3— 4 to 7— 1	11
7— 2 to 9—10	14
9—11 to 15— 9	17

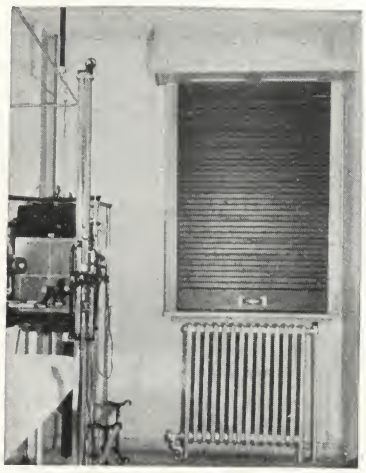
LIGHT RETARDING SHUTTERS

Other places where Wilson Rolling Partitions can be conveniently adapted is in the horizontal light-retarding shutter. This equipment is used extensively on windows of X-Ray and photography rooms, auditoriums, lecture halls, etc. Laboratories, especially, are often constructed without windows or other means of ventilation. With Light Retarding Shutters, windows can be placed where desired and all light excluded when total darkness is desired.

Other uses for these shutters are in auditoriums where windows are to be darkened to assist in the operation of any type picture machine.

All shutters may be so arranged that they may be operated simultaneously from a single push button control at the speaker's desk.

Details of this construction and design will be furnished with data on any particular problem, if presented to us.



Light Retarding Shutter

AMERICAN STEEL FURNITURE CO.

FACTORY AND SALES OFFICE
27 West 24th Street
NEW YORK, N. Y.

TELEPHONE
CHelsea 3-1236, 3-1237
GRamercy 5-6334

For Super-Steel Toilet Partitions, see Manufacturers' Index

SUSPENDED CUBICAL CURTAIN ROD EQUIPMENT

For Hospitals, Sanitariums, Etc.

Curtain Rods

The curtain rods are made of 16-gauge, 1-in. o.d., brass tubing, nickel or chromium plated as desired. All bends (B) are a part of the curtain rod and not a separate fitting—a feature that assures absolute rigidity. Flanges (A), suspension brackets (C), and adjustable tees are of solid brass plated to correspond with tubing. Wall and ceiling fittings are secured by means of toggle or expansion bolts and all joints between tubing and castings are made with thru-bolts with countersunk heads to provide a smooth surface.

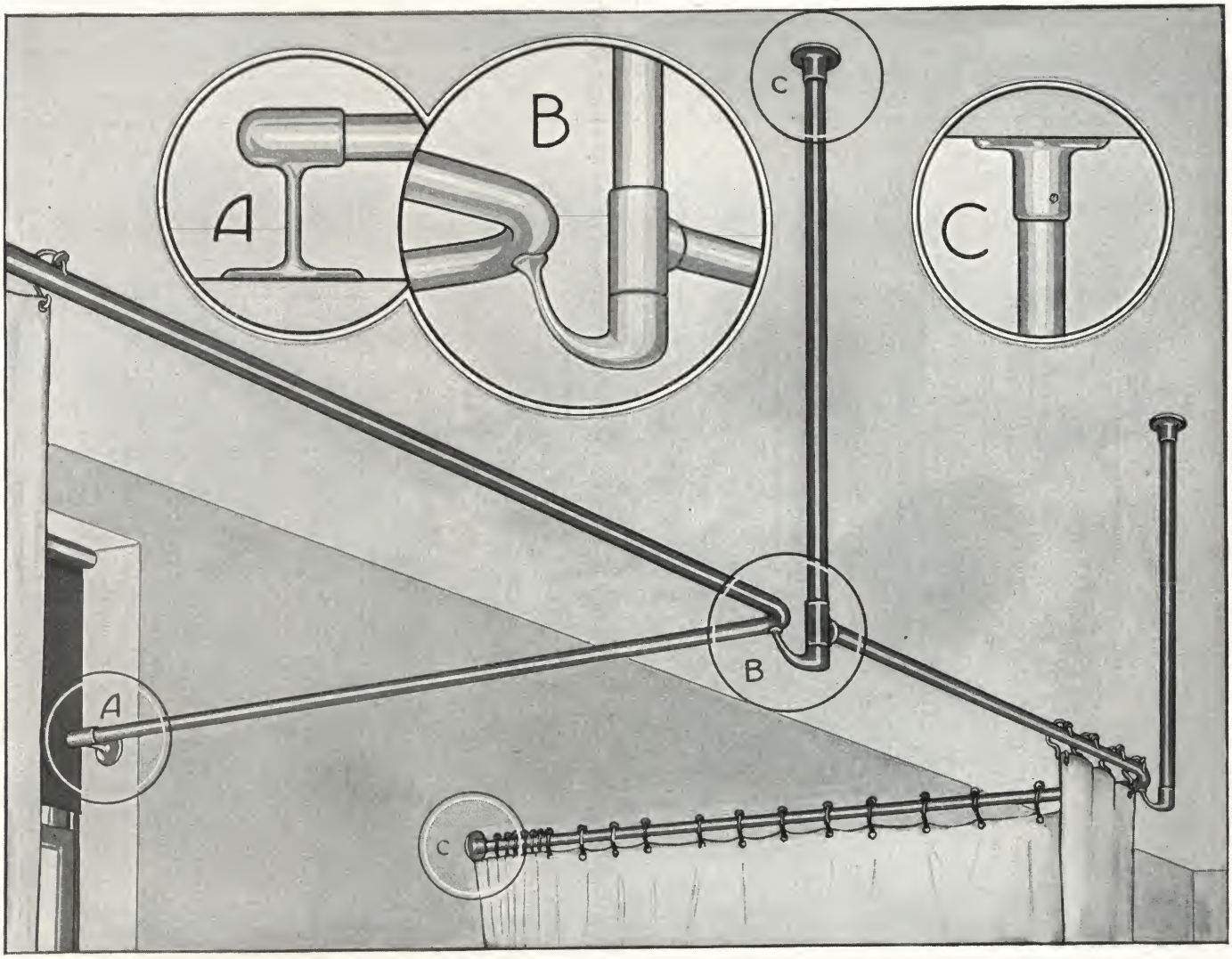
Installations of this type permit the enclosing of a bed with the use of a single curtain.

Curtains

The curtain material is either 8-oz. or 12-oz. duck or jean cloth, and curtains are available in white or in colors. All curtain material is thoroughly preshrunk and, in the colored curtains, a sunfast non-fading dye is used.

Curtains are made with a single hem at the bottom and a double reinforcing hem at the top.

The indestructible grommets at the top of the curtain are spaced 6 in. apart, permitting the use of an ample number of curtain hooks to insure smooth and easy operation of the curtain and to prevent it from sagging. Grommets and curtain hooks can be furnished nickel or chromium plated as desired.



Construction Features of Suspended Cubicle Curtain Rod Equipment

DAY'S CUBICLE CURTAIN EQUIPMENT

Manufactured by
H. L. JUDD COMPANY, INC.
ESTABLISHED 1817
HOSPITAL DIVISION
87 Chambers Street, NEW YORK, N. Y.

Originated, developed and perfected to answer the problem of a flexible and complete ward-screening that is instantly and quietly available without effort or obstruction.

Day's Equipment consists of (1) Specially designed hardware; (2) Day's felt wheel, roller bearing curtain hooks; (3) Day's highly perfected and supershrunk hospital curtains.

Day's Cubicle Curtain Equipment

Specially Designed Hardware—The equipment is suspended from the ceiling, allowing free and unobstructed floor space. By the use of the exclusive fittings, the curtains are easily drawn around corners and past the point of suspension, thereby permitting the complete screening of one bed with one curtain. All angles, curves and supports have been designed to allow smooth and easy operation and rigid construction.

All tubing is 1-in. outside diameter, 14 B&S gauge, solid brass; the fittings are heavy cast bronze, all finely chromium plated.

Day's Felt Wheel, Roller Bearing Curtain Hooks—Hooks are made of brass, chromium plated, with wheels of prepared compressed felt, and insure easy and silent operation of the curtain.

Day's Highly Perfected and Supershrunk Hospital Curtains—The curtains are of specially woven jean cloth, with a count of 104 warp threads and 62 filling threads; all yarns are of selected quality.

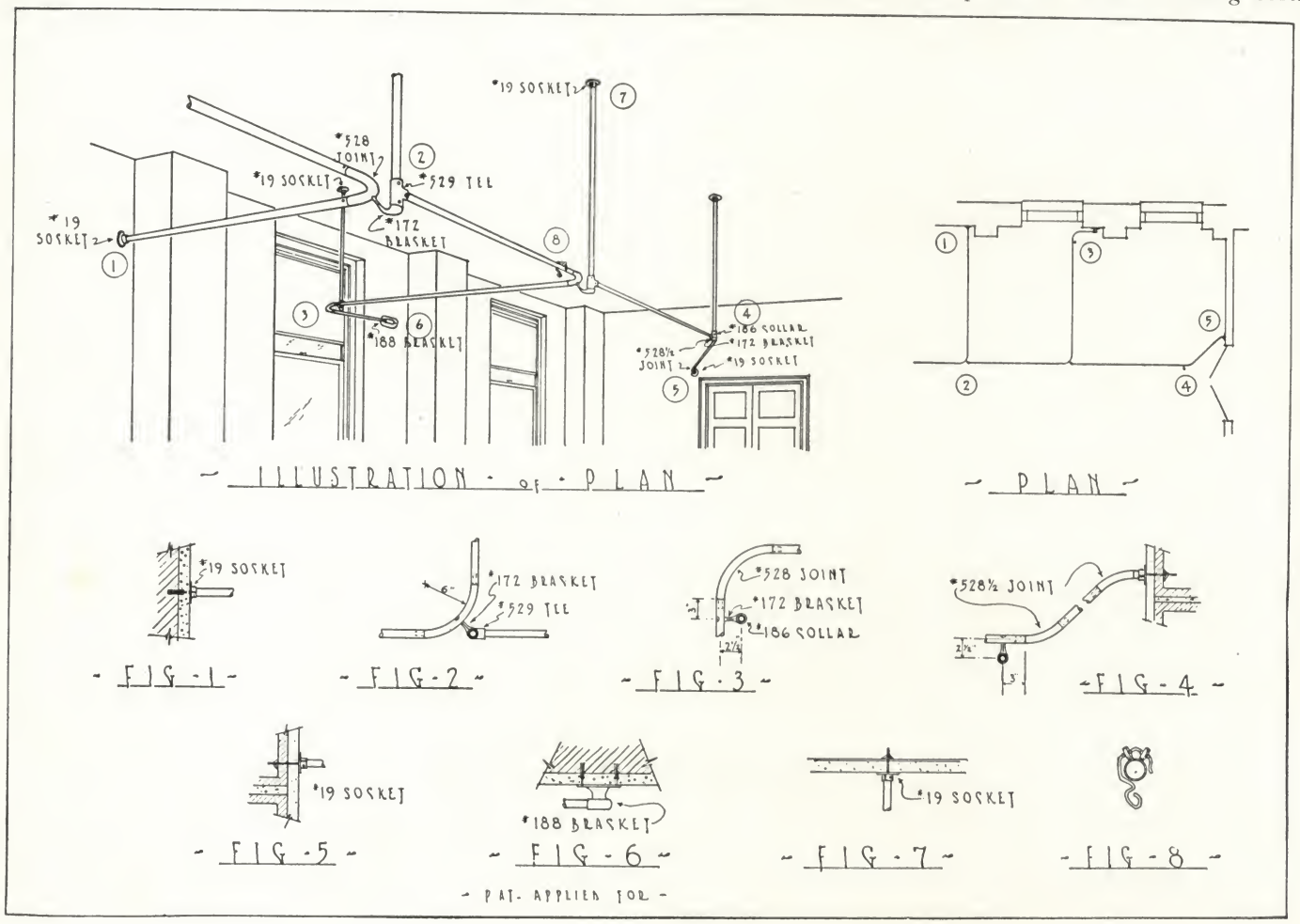
The material is supershrunk according to U. S. Navy specifications. Only Indanthrene dyes, which are guarteed sunfast and tubfast, are used.

The curtain is made with an extra border at the top consisting of a fold of material on both front and back, forming a hem of triple thickness. All seams are two-needle interlocked. The bottom hem is 1¼ ins. wide.

Specially constructed white metal rustproof grommets machined in the top hem every 6 ins. will not pull out.

Used in Outstanding Hospitals

This equipment is specified for use in wards, semi-private rooms, treatment rooms, dressing rooms, dental units, for enclosing special baths, and for numerous other purposes. The many installations in outstanding hospitals throughout the country automatically recommend this equipment to you. The cost averages less than five-eighths of one per cent of the building cost.



ARMSTRONG CORK COMPANY

FLOOR DIVISION

Member of The Producers' Council, Inc.

Manufacturers of Linowall, Linoleum, and Allied Floor Products

EXECUTIVE OFFICES

LANCASTER, PA.

BRANCH OFFICES

ATLANTA, GA., 107 Cone Street
BOSTON, MASS., 286 Congress Street
BUFFALO, N. Y., 509 Seventeen Court Street Building
CHICAGO, ILL., 1917 Daily News Building
CINCINNATI, OHIO, 232 W. Seventh Street
CLEVELAND, OHIO, 603-605 Hanna Building
DALLAS, TEX., 708 Santa Fe Building
DENVER, COLO., 720-21 Symes Building
DETROIT, MICH., 1232 Book Building
KANSAS CITY, MO., 114 W. 10th Street Building
LOS ANGELES, CAL., 1206 Santee Street
MEMPHIS, TENN., 1818 First National Bank Building
MINNEAPOLIS, MINN., 912 Plymouth Building
NEW YORK, N. Y., 295 Fifth Avenue
ST. LOUIS, MO., 705 Ambassador Building
SAN FRANCISCO, CAL., 180 New Montgomery Street
SEATTLE, WASH., 803 Terminal Sales Building

Armstrong's Linowall

Colorful — Economical — Durable — Washable

Description—Armstrong's Linowall is a wall covering material which meets every requirement for permanent, beautiful, easy-to-clean walls. It is made in two different forms, one a smooth-surfaced, resilient composition calendered on a closely woven fabric, and the other a specially treated heavy felt with a smooth, durable, fast-color lacquer surface. Both types are supplied in rolls.

The first type, called the 700 Series, is offered in twelve marble colorings, wood graining effects, and tile designs. Five colorings of a tile design are offered in the second type, known as the 800 Series.

Advantages—At much lower cost, Linowall offers the same advantages as ceramic materials. Properly installed, it makes a permanent wall finish that is good-looking, sanitary, and waterproof. Dirt, grease, or water marks can be easily removed by washing. From the wide range of colors and designs selections can readily be made which will harmonize with any decorative scheme.

Armstrong's (A) *Product*

Where to Use Linowall—Wherever a washable type of wall finish is desired, Linowall can be used. In the home, it is especially suitable for kitchens and bathrooms, but the colorings and design effects also lend themselves to dining-rooms, libraries, living-rooms, sun-porches, and halls. Restaurants, beauty parlors, barber shops, showrooms, hospitals, institutions, schools, hotels, office buildings, clubs, public buildings, etc., are among the non-residential interiors for which Linowall is highly suitable. It can be used either for covering the entire wall or for wainscoting.

Installation—Armstrong's Linowall is distributed only through merchants and contractors whose experience and skill qualify them to install it in full accordance with accepted specifications. It is applied over new or old plaster or fibreboard walls by a cementing process. The seams are waterproof and virtually invisible. Specifications for installation are given on the next page.

Accessories—Preformed corner pieces for outside angles are supplied in the 800 Series of Linowall. (See specifications for method of covering corners with 700 Series Linowall.) Wood cap molding enameled in suitable colors and metal cap strips enameled in brown or black are supplied for finishing wainscots.

If the floor is linoleum, Armstrong's Metal Back Cove and Base makes an attractive and sanitary wall joint to use with Linowall. It comes in sections (see next page) which are easy and inexpensive to install.



Brighter, more cheery, and less care exacting is the kitchen with Armstrong's Linowall. Just the wipe of a damp cloth, and grease spots, dirt, and water marks vanish from the gleaming surface of these colorful walls. For rooms that are being "done over," Armstrong's Linowall makes an ideal combination with Armstrong's Linoleum Floors.

Brief Specifications

For the architect who wishes to specify Armstrong's Linowall, the following form is suggested: "Armstrong's Linowall (700 or 800 Series) of color and design to be approved by the architect (or owner) shall be furnished and installed in accordance with the standard Armstrong Specifications by a qualified handler of their materials, whose work has been approved by the Armstrong Cork Company."

Specifications for Installing Armstrong's Linowall*

New Construction—The brown coat plaster should be brought to a true and even surface and the white coat hard-finish plaster must be thoroughly hardened and dried. Walls must be even and smooth and corners plumb.

It is recommended that the wall be first sized with the cement or adhesive to be used, thinned to a brushing consistency.

Old Construction—Any previous wall covering, such as paper, oilcloth, burlap, water paints, whitewash, etc., must be completely removed. The surface must then be patched, where necessary, filling in all depressions and removing any unevenness. The entire wall should be sized with the adhesive.

Corners—Inside corners must be filled with a quick-setting plaster and smoothed to a concave radius of not less than 3/8 of an inch. Outside corners should be finished to a concave radius of not less than 3/8 of an inch in all cases except where Patterns 720 to 723 and 740 to 742 are to be used, in which cases they must be finished square.

Cutting and Fitting—Armstrong's Linowall should be applied by a skilled mechanic. All cap molding and plumbing fixtures should be removed and the Linowall must be scribed and cut to an exact fit..

Applying the Adhesive—Armstrong's Linoleum Paste should be used for all installations that do not encounter wet or damp conditions. For places that frequently come in contact with water on the surface of the Linowall, Armstrong's Waterproof Cement should be used at the seams and edges.

In all cases the adhesive should be applied in a uniform film and rolled smooth. The amount of adhesive used should be at the rate of approximately one gallon per 100 square feet.

Hanging—All seams should be vertical. For wainscoting, pieces no longer than the six-foot width by the height of the wainscoting should be used. When the Linowall has been applied, it should be carefully smoothed and rolled with a padded or rubber-covered roller until all traces of air between the wall and the Linowall have been removed and complete contact is obtained.

Fitting Seams—1. *Armstrong's Linowall*, 700 *Series*.

A lapped seam should be employed wherever this can be done without disfiguring the pattern. Where the pattern does not permit this type of joint, the extra selvage should be carefully trimmed to a true straight edge and the seam neatly butted and thoroughly rolled.

When making outside corners the material should be cut so that a neat butt seam is made at the corner. After the seam has been made and the cement is thoroughly set, the edge may be sanded lightly, after which the surface can be restored by wiping with linseed oil. The only exception to this rule is in the case of allover patterns in which no block design is used (Patterns 700 to 702, 735 and 736). These may be formed around the corners, avoiding a seam closer than six inches on either side.

2. *Armstrong's Linowall*, 800 *Series*.

Cut the seams with a straightedge through the middle of the interliner and butt the edges as tightly as possible. After the seam is in place, roll immediately.

Armstrong's preformed corners must always be used for convex angles. These corners should be installed as the first operation after sizing and the remainder of the wall fitted to them.

In compensating for any irregularities of the outside room corner, it is advisable to take up these irregularities by fitting the Linowall to the pattern of the preformed corner and cutting into the block design where necessary, in order to make adjoining pieces match.

All inside corners should be turned over the smooth 3/8-inch radius.

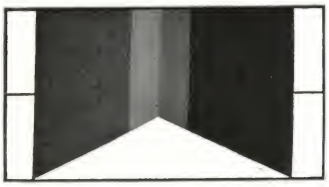
Applying the Trim and Finishing—Armstrong's Cap Strip, after being neatly fitted, should be securely nailed in place, using a headless nail of suitable length. All corner joints should be mitered.



Enameled wood cap molding for use with the 700 Series of Armstrong's Linowall.



Enameled wood cap molding for use with the 800 Series of Armstrong's Linowall.



Back view of preformed outside corner for the 800 Series showing metal angle.

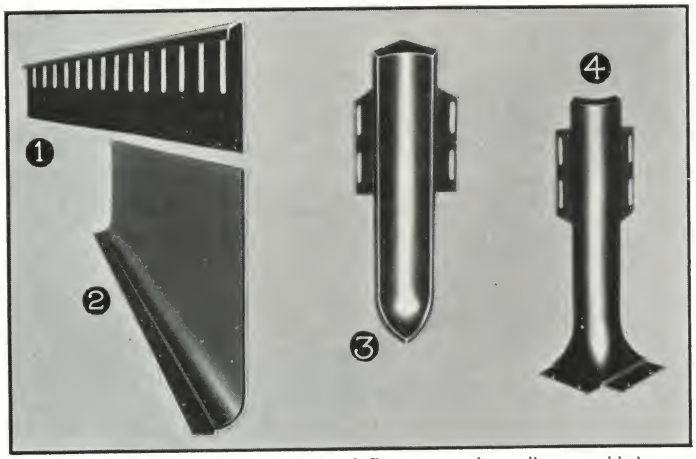


Front view of preformed outside corner for the 800 Series of Armstrong's Linowall.

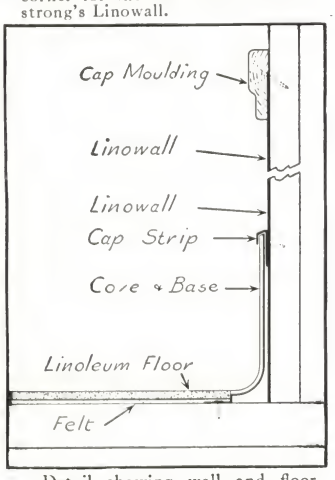
*The above specifications are abbreviated from the complete specifications which will be furnished on request.



Shows Armstrong's Linowall Wainscoting, Armstrong's Cove and Base, and Armstrong's Linoleum Floor, an attractive combination.



Armstrong's Linoleum Cove and Base comes in easily assembled sections: 1. metal cap strip which is nailed to wall; 2. ready-shaped piece which is inserted under cap strip and then nailed to floor; 3. metal piece for inside corners; 4. metal piece for outside corners.



Detail showing wall and floor finished with Armstrong's Linowall Wainscoting, Armstrong's Cove and Base, and Armstrong's Linoleum.



Armstrong's Linowall—Green No. 700
1 and 2 yards wide



Armstrong's Linowall—Orchid No. 701
1 and 2 yards wide



Armstrong's Linowall—Travertine No. 702
1 and 2 yards wide



Armstrong's Linowall—Green No. 720
1 and 2 yards wide



Armstrong's Linowall—Pine No. 735
1 and 2 yards wide



Armstrong's Linowall—Walnut No. 736
1 and 2 yards wide



Armstrong's Linowall—Green No. 740
Wainscoting—54 inches high



Armstrong's Linowall—Tan No. 741
Wainscoting—54 inches high



Armstrong's Linowall—Orchid No. 742
Wainscoting—54 inches high



Armstrong's Linowall—Tan No. 721
1 and 2 yards wide



Armstrong's Linowall—Blue No. 722
1 and 2 yards wide



Armstrong's Linowall—Yellow No. 723
1 and 2 yards wide

Armstrong's Linowall—White No. 810
48 inches wide



Armstrong's Linowall—Green No. 812
48 inches wide

Armstrong's Linowall—Yellow No. 813
48 inches wide



Armstrong's Linowall—Orchid No. 814
48 inches wide



Armstrong's Linowall—Blue No. 815
48 inches wide

COLUMBUS COATED FABRICS CORPORATION

Manufacturers of Wall-Tex, Decorative Oil Coated Fabric Wall Coverings and Oil Coated Fabric Wall Linings

COLUMBUS, OHIO

WALL-TEX

Fabric Wall Coverings

What Is Wall-Tex?

Wall-Tex is a durable and washable fabric wall covering in beautiful and decorative patterns for sidewalls, and plain colors especially for ceilings. Wall-Tex is a fabric impregnated with the finest quality oils and pigments.

You Can Select Wall-Tex Patterns for Every Decorative Plan

There are many Wall-Tex patterns for every decorative plan—patterns for the living room, dining room, bedroom, breakfast room, kitchen, and bath. Colors bright or subdued. Soft, delicate shades. Solid colors and modern pastel tints for both sidewalls and ceilings. Special lining cloths as a foundation, over the white plaster coat, for further decoration.

What Are the Advantages of Wall-Tex?

(1) Wall-Tex Is Washable—Besides the feature of modern decoration, Wall-Tex offers additional advantages. The surface of Wall-Tex is washable. Children's finger marks, spots and radiator streaks quickly disappear when mild soap and water are used. The delicate colorings retain their original beauty no matter how often you wash the surface. Wall-Tex remains fresh and new for years.

Wall-Tex is economical because it is durable.

(2) Wall-Tex Prevents Plaster Cracks—In new homes and buildings, cracks in sidewalls and ceilings are bound to occur. Wall-Tex is designed to prevent and hide these cracks. The tough, fabric texture is remarkably strong and strengthens the plaster; cracks are prevented. And even if persistent cracks do occur, Wall-Tex stretches slightly so that these cracks do not show through the surface.

(3) Wall-Tex Is Especially Designed for Ceiling Use—Decorators, architects and builders use and recommend Wall-Tex not only for sidewalls but for ceilings, too. Plaster cracks occur more often in ceilings and Wall-Tex, with its tough fabric texture, is ideal for ceilings.

Architects planning a ceiling to be finely decorated with applied mouldings, painted designs, etc. find Wall-Tex Stiffened Canvas (see sample below) or Prepared Lining Cloth, a superior base over carefully installed plywood or non-warping composition boards. With such construction a perfectly smooth, durable and crack-proof ceiling can be assured.

Plain Numbers, Lining Cloths

There are plain Wall-Tex fabrics especially for ceiling use and lining cloths for sidewalls and ceilings used over regular white plaster as perfect foundations for painting, mottling or stippling and for rough plaster effects or plastic paint treatments. Wall-Tex keeps its strength for years as a lining fabric. Cracks which may occur do not show through the surface.

No. 3099—A three-coat foundation for further paint work. Especially adaptable where paint coat must exactly match shades in woodwork. An ideal foundation for plastic paint and rough plaster finishes.

No. 3098—A dull-smooth white cloth especially desirable for paint work, tiffany finishes and stenciled paneling.

No. 3000—A dull-embossed white cloth that can be used without further decorating or, as a base for any kind of painted finish, will give a slightly rougher texture than No. 3098.

No. 3097—A stiffened canvas that makes a splendid foundation for paint with a result that looks like a stipple or canvas effect. (See sample below.)

Size of Roll—Easy to Hang

Wall-Tex comes in 12-yd. rolls, 48 ins. wide, each roll containing 16 sq. yds. Wall-Tex is hung the same way as wallpaper. New walls should be sized to stop suction; previously painted or calcimined walls should be thoroughly washed and then similarly sized. Wall-Tex is hung with any good quality paperhanger's paste. Edges are butted together and then rolled with a felt roller.

What Is the Cost of Wall-Tex?

Prices on Wall-Tex vary slightly for different patterns and also in different sections of the country. However, the cost of the regular dull-print and smooth-glaze patterns will approximate 60¢ per sq. yd. put on the wall complete (this includes cost of material and cost of hanging at the retail price).

See Jobber, Dealer, or Write Direct

Your decorator, wallpaper store or wallpaper jobber will gladly answer any specific questions on Wall-Tex. Or write direct to us for special Wall-Tex sample book of special interest to architects and complete information for A.I.A. file.



Wall-Tex Decorative Pattern No. 3381A

Wall-Tex Colonial Scenic pattern, antique finish. For halls, living rooms or dining rooms. One of many Wall-Tex decorative patterns



Wall-Tex Stiffened Canvas No. 3097

A perfect foundation for further painting and decorating. A rough decorative canvas effect is the result. This is hung over the regular white plaster coat



Wall-Tex Pattern No. 3706

For bathrooms. In smooth-glaze finish. A colorful modern fabric, ideal for bathroom walls

Wall-Tex—the Result of 34 Years' Experience in Making Fine Coated Fabrics

ASBESTOS LIMITED INC.

Manufacturers of "Newtile"—Asbestos Tiling in Sheet Form

8 West 40th Street, NEW YORK, N. Y.

WORKS: MILLINGTON, N. J., U. S. A.; LACHINE, CANADA; GENOA, ITALY

Product

"NEWTILE"—Asbestos Tiling in sheet form.

For "Newmarble" Asbestos panels simulating marble, see Manufacturers' Index.

"Newtile"

"Newtile" lends itself to the embellishment of whatever surfaces would ordinarily be considered suitable for tiling. Its gleaming beauty and its long wearing, water and fire resisting qualities make it an eminently satisfactory product, particularly where economy is desirable. Wherever walls can be tiled—in every home or business building—architects and builders are specifying the use of "Newtile" for smart ceramic effects.

The "Newtile" base is a strong, rigid sheet of asbestos. This is finished with a hard, highly polished surface closely resembling ceramic tile. Scoring at 4-in. intervals perfectly reproduces the effect of 4-in. square tiles even to the appearance of natural mortar joints.

The surface of "Newtile" is non-absorbent and repels dirt so completely that an occasional wiping with a damp cloth or washing with soap and water will restore its original brilliant lustre at once.

Colors

"Newtile" is furnished in four pastel shades—white, green, blue and cream; also black and red. These colors were selected for their ability to blend with practically any color scheme. "Newtile" base and cap are also made in the same colors.



A Typical "Newtile" Bathroom

How Furnished

"Newtile" is furnished in sheets, base and cap, in the following sizes:

Sheets: 32x48 ins., $\frac{3}{16}$ in. thick.
Base: 4 ins. wide, 48 ins. long, $\frac{3}{8}$ in. thick.
Cap: 2 ins. wide, 48 ins. long, $\frac{3}{8}$ in. thick.

Installation

Cutting—"Newtile" sheets are best cut with a $\frac{1}{8}$-in. carborundum wheel or a hack saw. However, they can be scored deeply front and back with a sharp instrument and broken cleanly and evenly. The cut edge must be worked with a flat file for close fitting. Any cutting or mitering of the base and cap can be done with a hack saw, filing the cut smooth for tight fitting.

Installing—*New Brick, Plaster or Masonry Surfaces*—Walls should be furred at 16-in. intervals before attempting to apply "Newtile." It is essential that masonry or plaster upon which furring is attached or embedded be dry and set before attaching "Newtile." Unless this precaution is observed any warping in the furring or studs will result in like distortion of the "Newtile" sheets.

Old Plastered Walls—It is advisable, where plaster is applied directly to the masonry, to furr so that the furring strips will be flush with the plaster. In order to do this the plaster should be removed at proper intervals to receive the necessary strips.

Note: Where it is not possible to use furring strips the use of "Newtile" *Plastic Compound* is recommended.

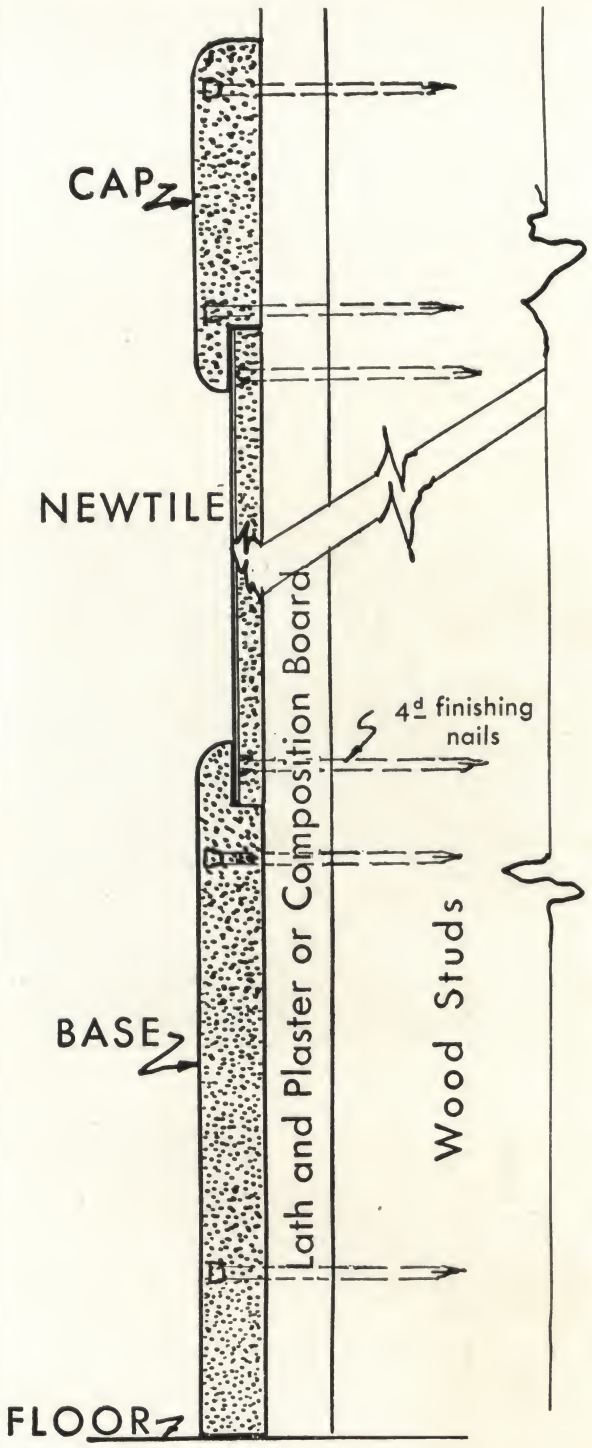
The first step after final inspection to insure a smooth, square and plumb-free wall, is to set the base in place. The scoring (on 8-in. centers) should be in line with the scoring on the "Newtile" sheets. Base should be set level and plumb shimming the floor where needed. If the plaster does not reach the floor it is advisable to fasten a 3 or 4-in. wood nailer strip flush with the base of the plaster surface, nailing it to the stud at the floor line. A hole is then drilled through the "Newtile" base with a No. 49 twist drill and the base attached to the studding with 4d finishing nails, which should be driven about $\frac{1}{8}$ in. of being tight, allowing space for slipping the "Newtile" sheets into the slot of the base.

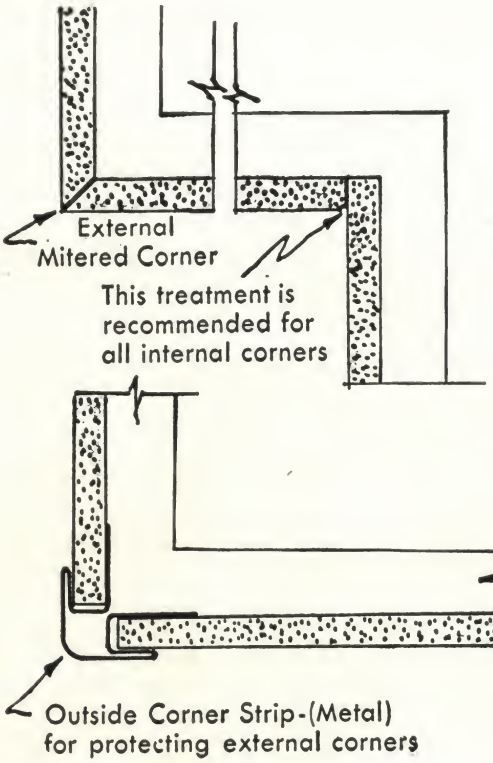
The "Newtile" sheets are now fitted to the entire surface, finishing one wall at a time. The top edge of the sheet with 4-in. base will be 51¾ ins. from the finished floor. The "Newtile" sheets are then nailed, through the scoring, at occasional intervals, to the studding or furring strips. Sheets should be tightly pressed together to avoid any gaps that might reveal the joints. "Newtile" *Joint Filler* will waterproof the joints if applied along the slots of the base and cap moulding and between the sheets.

Twist drill, finishing nails and "Newtile" Filler are included in each case of "Newtile."



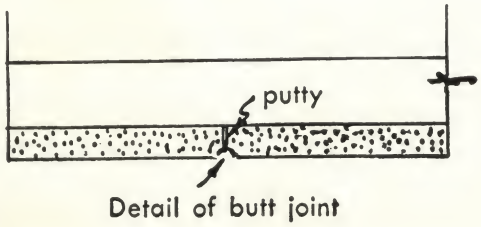
A Kitchen Finished with "Newtile"



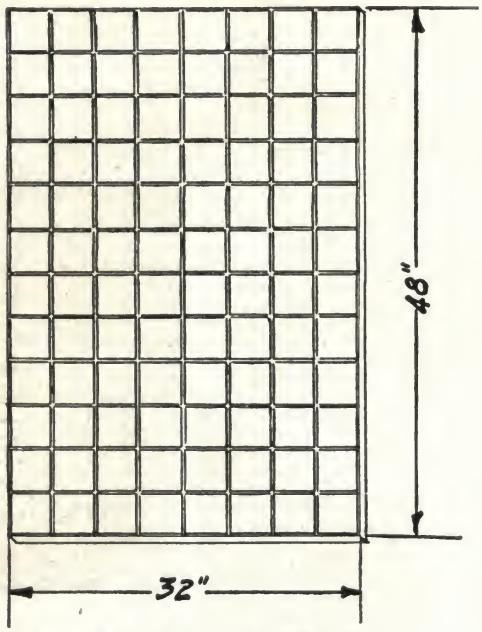


DETAIL No. 1

DETAIL No. 2



DETAIL No. 3



Sheet of NEWTILE

Detail No. 1 shows how "Newtile" sheets may be mitered for outside corners—or, if preferred, corner bars as shown in *Detail No. 2* of metal finished to match the sheets may be procured from the manufacturer.

The inside corner joint shown in *Detail No. 1* provides a satisfactory inside corner, and this treatment is our recommendation for all inside corner work.

Detail No. 3 shows how vertical and horizontal butt joints are made.

"NEWTILE" INSTALLATION DETAILS

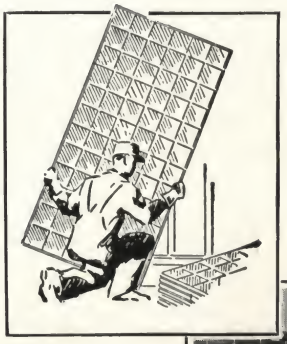
MARSH WALL TILE COMPANY

Manufacturers of Marshtile, a Sanitary Tile Finish Wall Material in Sheet Form

DOVER, OHIO

A BEAUTIFUL, SANITARY MODERN WALL FINISH

A Modern, Low Cost Tile Wall Finish



Marshtile is a permanent sanitary and lastingly beautiful interior wall finish in sheet form, the surface of which is scored into squares. It can be satisfactorily installed over old or new walls or woodwork at approximately one-half the cost of ceramic tile.

Basically, it is a specially processed, treated and warp-proof Masonite Tempered Presdwood to which a hard but flexible synthetic glazed surface is permanently integrated.

The tile-like glaze surface is beautifully finished by a burnishing treatment which completely seals the pores so that moisture and dirt cannot penetrate.

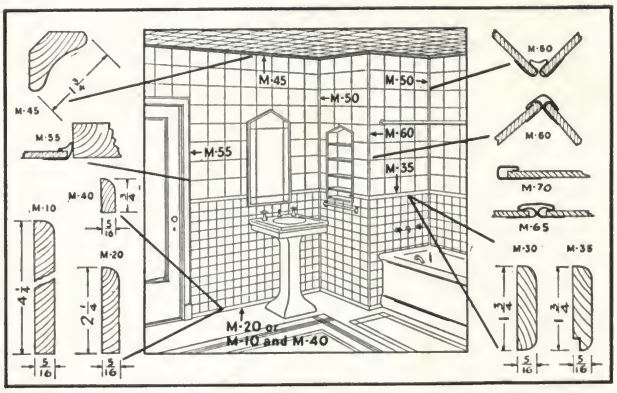
Acids, alkalis and non-abrasive cleaning compounds are repelled, insuring a stainproof, easy-to-clean surface which retains its beautiful appearance for years.

For Residential and Commercial Installation

Marshtile is especially practical for the bathroom, kitchen, breakfast room, nursery, laundry and recreation room in homes. It is adaptable for hospitals, doctors' offices, restaurants, banks, churches, retail stores, barber shops, apartment buildings and wherever the beauty, sanitation and durability of tile walls is desired.

Made in Black, White and a wide selection of beautiful colors, including *Pheasant Green, Blue, Orchid, Lark Ivory, Dove Grey,* and *Peach,* with moulding and trim in colors to harmonize.

Many attractive combinations are possible with the beautiful colors and striking modernistic effects in black and white can be achieved.



Numbers and Description of Marsh Moulds

M-10 Presdwood Base, $\frac{5}{16}$x4¼ in., waterproof
M-40 Presdwood Shoe, $\frac{5}{16}$x ¾ in., waterproof
M-20 Presdwood Base, $\frac{5}{16}$x2¼ in., waterproof
M-30 Presdwood Cap, $\frac{5}{16}$x1¾ in., waterproof, single rabbet
M-35 Presdwood Division, $\frac{5}{16}$x1¾ in., waterproof
M-45 Wood Ceiling Angle Cove, $\frac{13}{16}$x1¾ in., waterproof treated

M-50 Inside Corner
M-55 Casing
M 60 Outside Corner
M-65 Division
M-70 Bathtub Mould

} Rustproof metal in chromium plate or finished to harmonize with Marshtile colors

Standard Sheet and Block Sizes

Sheets—Standard sheets are 4x5 ft., 4x6 ft., 4x7 ft., and 4x8 ft.

Blocks—Standard size sheets are available scored as follows:

4x5 ft.—4 and 12-in. squares.
4x6 ft.—4, 8 and 12-in. squares.
4x7 ft.—4 and 12-in. squares.
4x8 ft.—4, 8, 12 and 16-in. squares.



Mouldings and Trim

Marshtile Moulds and Trim are available finished in any of the standard colors. Bases, Caps and Division Strips are formed from oil-tempered Masonite Presdwood. Metal Corners and Casing Moulds are made of rustproof metal finished in the standard colors and chromium plate. Details, description and sizes are shown at the left.

Marshtile is Easy to Install

Marshtile is inexpensive to install. It is furnished in large light-weight wall size sheets making it possible, for the average size room, to apply it to each wainscote wall in one piece. Quick installation follows at minimum cost. Settling of walls, cracking of plaster or vibration does not affect Marshtile one-piece installation.

Marshtile may be easily sawed and trimmed to fit snugly around plumbing fixtures, doors, windows and built-in fixtures. Base, capping, inside and outside corners are neatly finished with a choice of mouldings in matching or harmonizing color.

Samples

A sample of Marshtile, in any of the standard colors, will gladly be furnished on request, together with estimates or any other desired information.

KEASBEY & MATTISON COMPANY

AMBLER, PA.

Branches:

BALTIMORE, MD.	CLEVELAND, OHIO	MINNEAPOLIS, MINN.	PITTSBURGH, PA.
BOSTON, MASS.	DETROIT, MICH.	NEW YORK, N. Y.	ST. LOUIS, MO.
CHICAGO, ILL.	MILWAUKEE, WIS.	PHILADELPHIA, PA.	WASHINGTON, D. C.

Asbestos Building Products manufactured by its affiliated concern, Ambler Asbestos Shingle and Sheathing Co., Ambler, Penna., are being distributed by Keasbey & Mattison Company

Ambler Waltile

DECORATIVE Ambler ASBESTOS WALTILE

A decorative fireproof sheet material furnished in a choice of seven colors and ready for immediate application to new or old walls. Sheets are 32″ x 48″, 3/16″ thick, with a permanent glossy surface, scored 4″ x 4″ for tile effect.

The colors include: Pink, Cream, White, Smoke, Black, Apple Green and Nankin Blue. Waltile is recommended for wainscoting of bathrooms, kitchens, dinettes, laundries, halls, lavatories, pantries, professional offices, restaurants, stores, meat markets, beauty parlors, etc. It is fireproof, fadeproof, verminproof and easy to clean.

On special request Waltile sheets can be furnished scored 8″ x 8″ or 16″ x 16″. It can also be furnished unscored if desired.

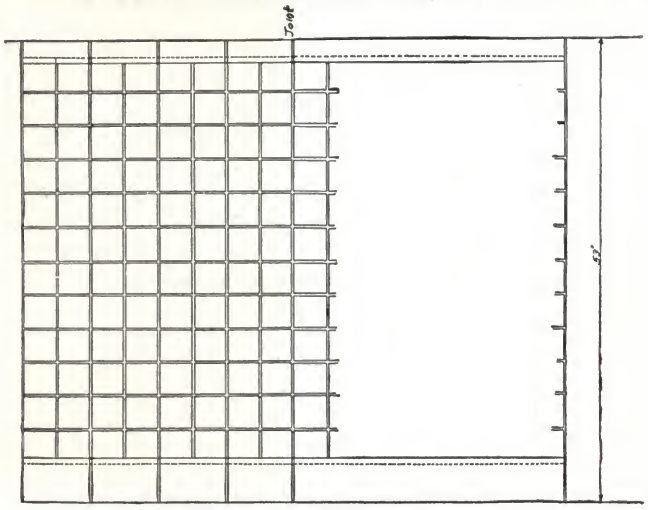
Cap, base and intermediate band mouldings are furnished in 4′ lengths to match or contrast with the colors of the sheet. Cap and intermediate band mouldings are 2″ wide; base mouldings are 4″ or 6″ high. Metal corner bars to match sheets are also available.

Cap and base mouldings are scored every eight inches. Each full crate of Waltile contains 10 standard sheets weighing about 255 lbs., together with accessories as follows: small can of Joint Compound, tube of Touch-Up Paste matching the sheets, 1/16″ drills, camel's hair brush and 1/4 lb. of No. 17, 2-inch brads.

Waltile sheets weigh approximately two pounds per square foot. The permanence of the finish has been proven in years of hard service in many buildings.



FOR NEW BATHROOMS OR REMODELING, SPECIFY WALTILE



DETAIL OF WALTILE SHEET, CAP AND BASE

Application

Waltile can be applied by any good mechanic. It may be nailed directly to sheathed studding by drilling through the score marks and using brads furnished with each shipment. On masonry walls the sheets may be affixed with a plastic compound supplied by the manufacturer. Full instructions for applying are contained with each shipment and can also be furnished separately upon request.

Ambler Linabestos

Ambler Linabestos Wallboard is made of Portland Cement and Asbestos Fibre, compressed into rigid sheets 48″ x 96″ or 48″ x 48″ in size, with thicknesses of 3/16″, 1/4″ and 3/8″. This material is recommended for interior or exterior siding or wainscoting, fireproof partitions and all places where a flame-proof, rigid, dense wallboard is required.



Black Cap & Base
Apple Green Sheet

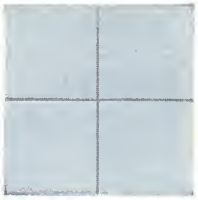
RANGE OF COLORS OF WALTILE (Black and White Sheets also furnished)



Jersey Cream



Pink



Nankin Blue



Smoke

Ambler Marbleite

Ambler Marbleite sheets reproduce in exact detail the beauty of the finest specimens of selected marbles, at but a fraction of the cost. The base of these sheets is a fireproof asbestos board approximately 3/16-inch thick. The surface is tough, glistening and enduring.

To produce the delicate shadings and to assure permanency, only mineral pigments have been used. These pigments are baked on the sheets under pressure and heat. Sheets are 32 x 48 inches. Rabbeted cap and base to match are furnished in 4 and 6-inch widths.

Four styles of Ambler Marbleite are now available:

Jaune Fleuri (Spanish type)
Verd Antique (Italian type)
Black-and-Gold (African type)
Solid Black

Ambler Marbleite is an ideal material for theatre lobbies, store fronts, window bulks, bathrooms, hall closets, wainscoting of halls in office buildings and public buildings, restaurants and similar uses.



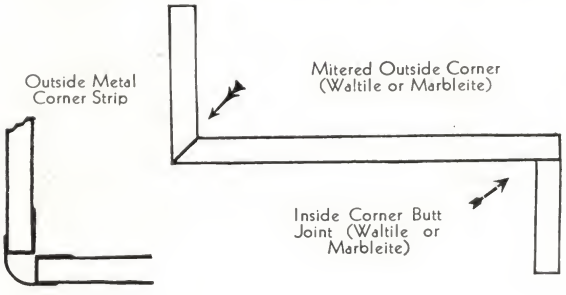
MARBLEITE USED FOR BATHROOM WALLS WITH STRIKING BEAUTY

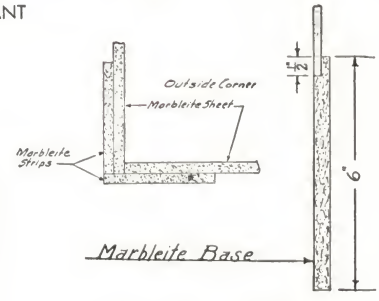


VERD ANTIQUE MARBLEITE FOR THEATRE LOBBY



JAUNE FLEURI USED IN ATLANTIC CITY RESTAURANT





Detail of Marbleite Rabbeted Base



CLOSE-UP OF VERD ANTIQUE MARBLEITE

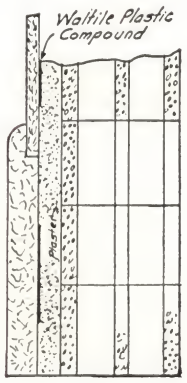
Application

Ambler Marbleite sheets may be applied by nailing with brads through small holes drilled through the sheets, then countersinking the brads and touching up the surface with a "Touch-up Paste" furnished by the manufacturer. Nickel-headed screws may be used instead of brads if desired. When applied to old plaster walls a plastic compound also furnished by Ambler may be used to hold the sheets.

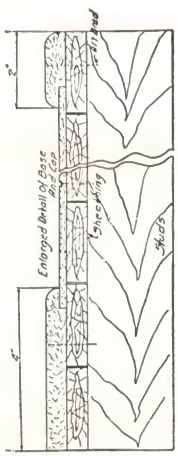


SECTION OF JAUNE FLEURI MARBLEITE SHEET

Sketches showing details of application of both Waltile and Marbleite appear below.



Applying Waltile Base on Plastered or Masonry Walls



Waltile Applied on Sheathed Studs

PORCELAIN TILE COMPANY

Veos Wall Tile

WARREN, OHIO

DISTRIBUTERS IN PRINCIPAL CITIES

Product

VEOS STANDARD WALL TILE—Vitreous enamel on steel.

The Company

Over four years ago the PORCELAIN TILE COMPANY put on the market a new steel bodied tile, beautiful in appearance, with permanent, non-fading colors. It has proved, in that time, that its original beauty is enduring. Since then they have become associated with the Youngstown Pressed Steel Company, which brings to the PORCELAIN TILE COMPANY the resources, experiences, and manufacturing facilities of a recognized leader in an industry essential to the large scale production of Veos Standard Wall Tile.

The combined product of the PORCELAIN TILE COMPANY and the Youngstown Pressed Steel Company has been given a new name—Veos. This descriptive name is compounded from the first letters of "*v*itreous *e*namel *o*n *s*teel."

The union of these two companies will result in a still better product, more efficient manufacturing and distribution, with lowered costs for a better product.

Veos System of Standard Wall Tiling

The Veos system of standard wall tiling is not merely a wall surfacing finish. It is a complete insulated wall with less than one-third the weight of a clay tile wall. When installed, it forms a permanent porcelain surface that will not crack or chip, and whose surface units will not become loose.

The component parts consist of vitreous enameled steel tiles made in standard face dimensions and flanged in such a manner as to fit into a supporting, self-locating insulating fibre board base by means of a special adhesive, so that a strong, lasting handsome porcelain surfaced tile wall results.



Showing How the Tile Is Pressed into the Grooved Section of Sheet



One of Many Veos Installations in the Wardman Park Hotel, Washington, D. C.
Wall in Jade Veos with decorative motif in black



Application of Age-resisting Veos Glue to Back of Veos Tile

Veos Is Easy to Install

Foundation Sheet—The base which holds Veos Tile is insulating lumber in units 4x5 ft. in size, thoroughly waterproofed and grooved in squares to receive the flanges of the tiles. The base is applied directly to the studding or hollow tile in new construction. In remodeling old rooms, it is attached directly to the existing walls.

Veos Glue—A special plastic adhesive which does not shrink in drying. Veos Grout is used for pointing up all of the joints, thus making the wall tight and impervious to the infiltration of moisture and dirt.

Why Veos Wall Tiles Are Superior

All vitreous-surfaced tile *look* alike—their difference lies in the bodies on which the enamel is fused. The only function the tile body has is to support the vitreous surface and to contribute to its permanence.

Vitreous-enamel-on-steel is a greatly improved surface—in its physical properties and factors of permanence. Its superiority is one of fact and has been definitely proven by competitive tests. Thus, it is the steel body of Veos Tile that makes it a superior product for tiling walls.

Made in a Variety of Pastel Shades

Veos is available in a variety of pastel shades for attractive color schemes in bathroom and kitchen. A special process of fusing assures that the colors will be fadeless.

While any special colors desired can be developed, those which are most frequently used and which are always adequately stocked are five: a lustrous, solid black; a fine warm white; a lovely tan shade called Bisque Ivory; a delightful blue-green known as Aqua; a delicate orchid called Daybreak. These colors were especially created for PORCELAIN TILE COMPANY by the famous color expert, Hazel Adler. She has succeeded in giving them such delicacy of tone that all of them blend with a wide range of colors popular for bathroom and kitchen furnishings. Veos walls never grow monotonous.

Can Be Used Wherever Wall Tiles Are Desired

Veos Tile walls are suitable and appropriate for installation wherever tile walls are desired. For bathrooms, kitchens, stair halls, restaurants, gymnasiums, school buildings, subways, churches, meat markets, theatres, stores, etc.

Samples and Service

Descriptive literature and samples of tile and base will be sent architects and builders on request, and specific questions will be fully answered.

Photographs of characteristic installations will be furnished to architects who are interested.



Same Section with the Grouting Applied

SANIMETAL TILE CORP.

16 West 22nd Street
NEW YORK, N. Y.

Sanimetal Tiles

Sanimetal Tiles consist of individual tile blocks made of rust resisting metal, faced with a hard, high-gloss baked enamel finish that is durable and will not crack, scale nor chip. They have all the advantages of tile and none of the disadvantages of the artificial-looking tiles in sheet and panel forms. When properly installed, they provide a charming colorful wall or ceiling surface that is not only sanitary, waterproof and fireproof, but unusually economical in cost. The tiles are easily and quickly applied over the surface to be covered, using our special oil cement. The few simple tools required and the various steps involved are illustrated and described in the plate below.

SANIMETAL TILE CORP.
REG. U. S. PAT. OFF.

A Variety of Uses

Sanimetal Tiles may be applied to any wall or ceiling surface—plaster, wood, iron, plaster boards, cement, etc. Sanimetal is especially suitable for use in bathrooms, kitchens, breakfast nooks and halls in new or old residences, as well as in restaurants, hotels, hospitals, etc. In fact, wherever attractive appearance and sanitary conditions are essential, Sanimetal Tiles may be effectively and economically used.

Beautiful Colors and Designs

Sanimetal Tiles and border strips are finished in pea green, apple green, orchid, white, black, pearl-gray, blue, persian brown, and ivory. Any combination of colors or designs may be worked out providing a wide range of colorful, decorative effects.

Conveniently Packaged

Sanimetal Tiles are packed in fibre boxes measuring 6 x 6 x 2 in. over all. Each box contains 35 sq. ft. of tile and, because of its compactness and light weight is easily handled. Shipping weight less than ½ lb. to the sq. ft.

Short Specification

The areas indicated on plans shall be finished in Sanimetal Tile as manufactured by the SANIMETAL TILE CORPORATION of 16 West 22nd Street, New York, N. Y.

Surface Preparation—Walls and ceilings shall be smooth and straight, wet or greasy surfaces shall be cleaned and thoroughly dry before applying and, where surface to be tiled is not already painted, it shall be sized with a cheap grade of shellac.

Application—Apply Sanimetal as per the directions of the Sanimetal Tile Corporation, which directions become part of this specification.

MATERIALS, TOOLS AND METHOD OF APPLICATION



The First Step
Applying the special oil cement over surface to be tiled.



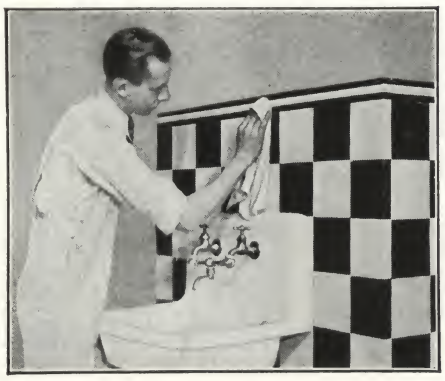
The Second Step
Pressing the individual tile blocks into position.



The Third Step
Cutting or bending the tiles to fit around obstacles.



Materials and Tools Required
These comprise the tiles, oil, cement, a pair of scissors and wide putty knife. This illustration shows enough tiles and cement for a 105 sq. ft. installation



The Final Step
Removing the cement from the surface of the finished wall—done by simply wiping the surface with a dry cloth.

SANITAS WASHABLE CLOTH WALL COVERING

MANUFACTURED BY

THE STANDARD TEXTILE PRODUCTS CO.

320 Broadway, NEW YORK, N. Y.

Sold by Wall Paper and Paint Jobbers, Dealers and Decorators All Over the United States

SANITAS CLOTH WALL COVERING

A cloth wall covering, 48 in. wide, put up in 12-yd. rolls. Surface is non-absorbent and repels dirt and grease stains. The cloth back has an average strength of 35 lbs.

Sanitas is made in styles and colorings suitable for almost any interior. Figured or plain effects may be easily painted after having been on the wall for years.

Sanitas is hung by any competent paperhanger, using the regular pastes and sizes.

The cracking and falling of plaster may readily be prevented by applying Sanitas after the cracks have been properly cut out, filled and leveled. The material is particularly adapted to the re-modeling of old buildings.

Sanitas should be washed down when needed with a sponge and a warm soapy solution. The goods should then be rinsed off with clean water and dried with a soft dry cloth to prevent streaking.



Sample of Sanitas in Decorative Flat Finish

Principal Types of Sanitas

SC Series—Scenic Friezes 48 and 54 in. high.

M Series—Metalline Brocades, embossed metallic effects.

T Series—Plain Flat Finished Tints for walls and ceilings.

A Series—Designs and colorings suitable for rooms and halls.

C Series—Designs and colorings suitable for rooms, at lower prices.

P Series—Plain Glazed Tints.

D Series and F Series—Figured glazed effects for bathroom, kitchen and pantry.

4800 Sanitas Canvas—An economically priced stiffened canvas.

4801 Sanitas Prepared Canvas—A pyroxylin filled, stiffened canvas.

4802 Sanalining—An oil-filled, muslin lining for paint, paper or calcimine.

4803 Sanitas Smooth Lining—Ideal where no "weave" effect is required.

Sanitas has been manufactured and sold since 1904 under the trademark printed on the back of each 12-yd. piece, and during that time has been used in nearly every conceivable type of building.

Some Outstanding Installations

Alden Park Manor, Brookline, Mass.; Detroit, Mich.; Philadelphia, Pa.
Battle Creek Sanitarium, Battle Creek, Mich.
Jewish Hospital, Philadelphia, Pa.
Y. M. C. A. buildings all over the country
Steamers of the Lloyd Sabaudo Line
Hotels St. George, Brooklyn; New Yorker and Edison, New York, N. Y.
Ritz-Carlton, Shelburne, Brighton, Atlantic City, N. J.
League of Nations Building, Geneva, Switzerland
Several hundred homes built by Walter A. McClatchy in Philadelphia, Pa.
Model City of United Steel Corp., Morgan Park, Minn.
Masonic Hospital, Elizabethtown, Pa.
St. Clair Hotel, Chicago
Wm. Penn Hotel, San Francisco
Hoboken Land & Improvement Co., Hoboken, N. J.

We shall be glad to send you sample book containing over 130 styles (without charge).

BIGELOW-SANFORD CARPET CO., INC.

Since 1825,—Weavers of Carpets and Rugs to Contract Specifications and for the Home

MAIN SALES OFFICE
136 Madison Avenue
NEW YORK, N. Y.

BRANCH OFFICES

BOSTON, MASS.
PHILADELPHIA, PA.
PITTSBURGH, PA.
ATLANTA, GA.
DALLAS, TEX.
ST. LOUIS, MO.
CHICAGO, ILL.
DETROIT, MICH.
MINNEAPOLIS. MINN.
DENVER, COLO.
LOS ANGELES, CALIF.
SAN FRANCISCO, CALIF.
SEATTLE, WASH.

MILLS AT
THOMPSONVILLE, CONN.
AMSTERDAM, N. Y.
CLINTON, MASS.

Specific Services and Co-operation Rendered to Architects and Builders

The service offered you by Bigelow-Sanford's Contract Department is *complete.* Starting from the time when a building is in the blue-print stage, it follows through to the laying of carpets or rugs on the floors.

This comprehensive service to architects, builders and decorators is yours to call upon. You may use it in whole or in part.

Get in touch with any of the above branches whose personnel is trained to work with architects and builders on all carpeting questions.

Styling

Bigelow-Sanford maintains a staff of specially trained designers who will study the architecture of your building and *create* carpet designs to harmonize, or will carry out *your* ideas, *interpreting* them in the way that will make for greatest beauty together with economy in production.

In either case, exact color sketches will be submitted for your approval. (See reproduction of a section of such a design in color on the opposite page. Each of the small squares on the paper represents one tuft in the carpet.)

Estimating and Budgeting

Bigelow's contract men have had years of experience in working with architects. They know how to read blue prints for the purpose of estimating accurately both yardage and costs. When it is necessary to keep within a definite budget, they can show you how to do this most satisfactorily by recommending different grades of fabrics—each one particularly suited to the needs of the space in which it is to be used. If desired, all of these different fabrics may be made up in the same pattern and color scheme. Often, too, they can show you how a minor change in the plan of your building may effect a major saving in carpeting costs.

Delivery Service

All contract orders are given individual attention, each step in production being carefully scheduled to meet specified delivery dates. *Your* order will never be held up by "run-of-mill" production—it will be *ready as ordered.*

Supervision of Installation

Finally, Bigelow carpet experts supervise installation if desired, working closely with the contractor who actually lays the carpet. They will see that every last detail is right, making sure of a beautiful and economical job.

Selecting the Right Fabric

On the fifth page following, you will find specific information in regard to characteristics of certain of our best known and time proven fabrics.

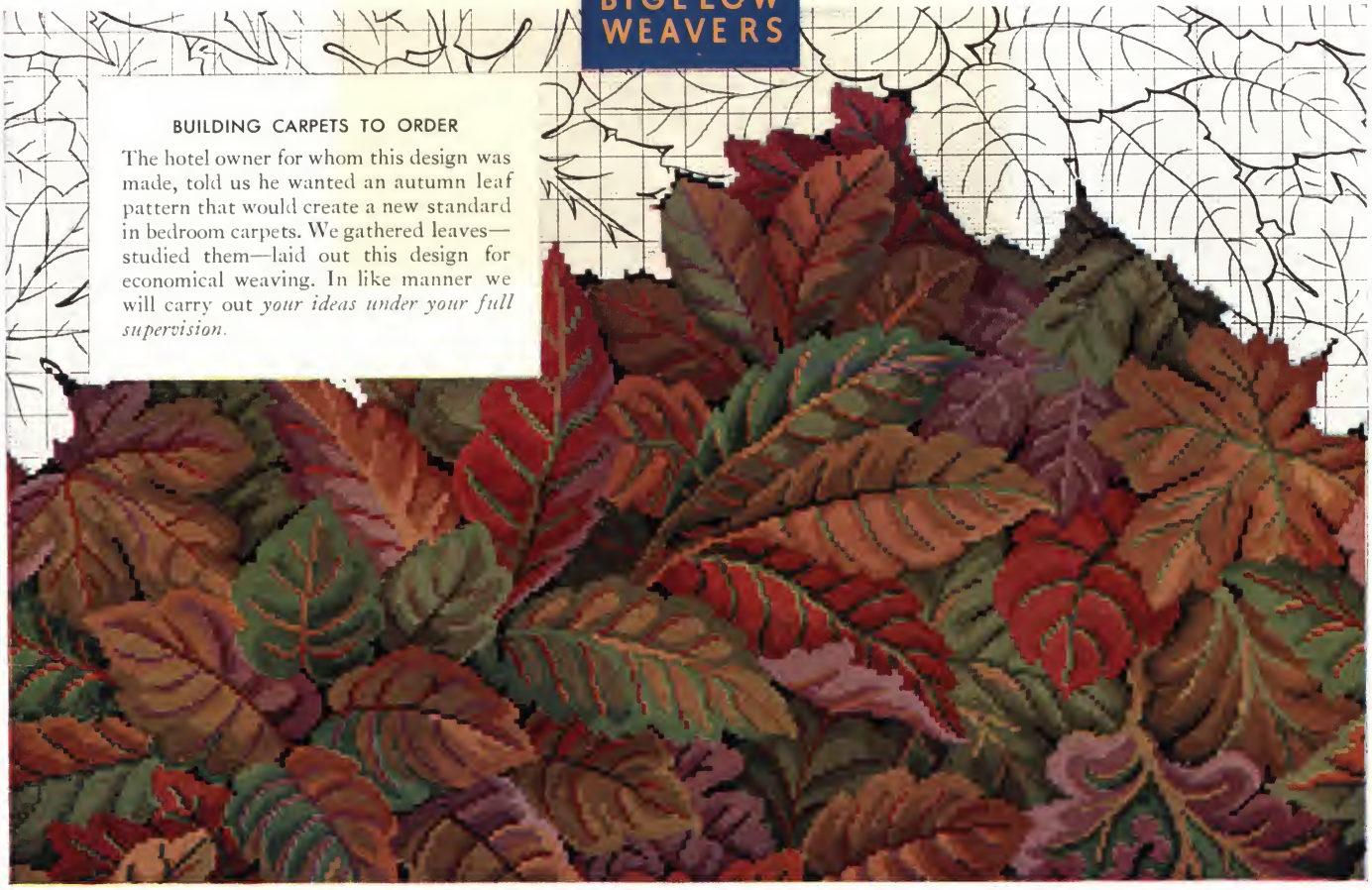


Bigelow Merrimac Wilton: This carpet was designed especially for the United States House of Representatives, Washington, D. C.



Bigelow Alba Wilton: Created for the Club Leviathan—on board S.S. Leviathan—after copyrighted design by Eugene Schoen, Decorator.

WOVEN BY THE
BIGELOW
WEAVERS



BUILDING CARPETS TO ORDER

The hotel owner for whom this design was made, told us he wanted an autumn leaf pattern that would create a new standard in bedroom carpets. We gathered leaves—studied them—laid out this design for economical weaving. In like manner we will carry out *your ideas under your full supervision.*



Bigelow Austrian Loom Tufted: Made for the Lounge of the Empire State Club, New York City.
Architects: Shreve, Lamb & Harmon.
Decorator: A. L. Harmon.

Bigelow Statler Wilton: This carpet created for use in bedrooms of Statler Hotels.
Decorator: Rorimer Brooks Studios, Inc.



Paramount Publix Velvet: This fabric was designed and woven for Paramount-Publix Theatre, Boston, Mass.
Architect: Arthur H. Bowditch.
Decorators: Paramount-Publix Decorative Staff.

Bigelow-Paramount Wilton: Pattern woven in this and two additional grades for Earl Carroll Theatre, New York City.
Architect: Geo. Keister. Decorator: John Wanamaker, N.Y.

WOVEN BY THE
BIGELOW
WEAVERS







Hartford—Saxony: In the Lounges of S.S. President Hoover and S.S. President Coolidge of the Dollar Line.
Decorator: A. F. Marten & Company.

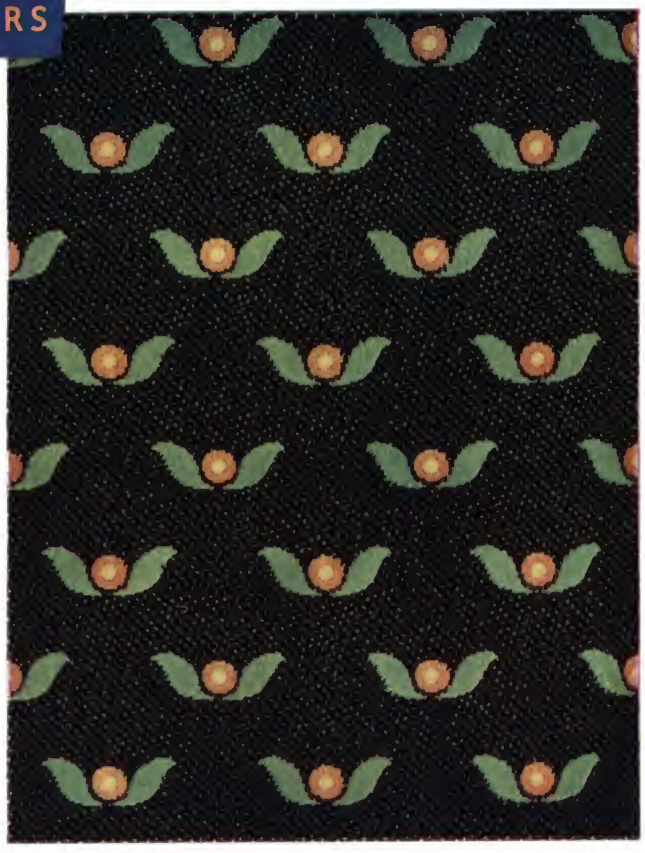
Bigelow Alba Wilton: Carpet designed for the Fur Room of Higbee Store, Cleveland, Ohio
Architects: Graham, Anderson, Probst & White.
Interiors: Philip L. Small and Rorimer Brooks Studios, Inc.



Hartford—Saxony: Fabric specially designed for Scottish Rite Temple, Scranton, Pa.
Architects: Hood, Godley & Fouilhoux.
Consulting Decorator: A. F. Kimbel.

Bigelow Alba Wilton: For the Sea Glades Grill Room, Hotel St. Regis, New York City.
Decorator: Herbert R. Stone.





L. C. CHASE & COMPANY

INCORPORATED

Sales Division of Sanford Mills, Sanford Me.

Manufacturers of Chase Seamloc Carpet

TELEPHONE
MUrray Hill 4-1615

295 Fifth Avenue
NEW YORK, N. Y.

BRANCH OFFICES
CHICAGO DETROIT LOS ANGELES

SEAMLOC CARPET AND ITS SERVICE TO ARCHITECTS

Chase Seamloc is the new, all-wool carpet manufactured by Sanford Mills, of Sanford, Me., pioneer weaving concern founded in 1867 and makers of the well-known Chase Velmo and other fabrics. It is sold exclusively by L. C. CHASE & COMPANY, known to the textile world since 1847.

CHASE SEAMLOC CARPET SANFORD MILLS SANFORD, MAINE

The reputation of these two great companies, whose names have been synonymous with high quality, fair dealing and superior service for generations, as well as years of research and service and laboratory tests commend Seamloc to the public.

A brief glimpse of Seamloc's unusual features will reveal why it is especially adapted to architectural purposes.

So far as the pile surface is concerned, Seamloc is practically the same as similar high grade, all-wool carpets. The back is radically different. Instead of jute or other customary filler material, a special composition has been employed. It locks every pile tuft securely into the weave and allows cutting the carpet in any direction without raveling. Sections so cut, are then joined together by means of a tape and special cement, the joints so formed, being stronger than sewn seams.

The result is a carpet of special value to the architect. It requires absolutely no needle nor thread as no sewing is necessary. It does not ravel, hence edges do not have to be bound or serged. The architect may create unlimited patterns, designs and color combinations to suit a special client or a special interior.

There is practically no waste. If small fragments are left, they may be fabricated into scatter rugs. Seamloc carpet introduces the era of the "Tailored Floor." Blue print specifications may be followed with accuracy. With Seamloc, the carpet becomes an integral part of the architectural scheme. It greatly widens the scope of the architects' work for it permits him to create in soft, textile materials what heretofore has been confined almost entirely to hard floor coverings. Seamloc meets the current demand for color, greater harmony of ensemble, acoustical correction and genuinely serviceable interiors.





Above:
Modern adaptation of a Colonial motif in Seamloc carpet for floor covering in a commercial interior. Here, the architect found in Seamloc, the suitable textile material for individual expression at marked savings in cost and time.

Left:
Directional lines in Seamloc carpet lead visitors' eyes and footsteps naturally to focal points of interest in a store interior. At the same time, the design is in complete harmony with the rest of the interior.

Right:
Cool, Seamloc carpet colors and a design in concentric circles focus attention on a fur salon. Over 4000 yards of Seamloc carpet were used in this interior by the architect who chose the material for proper expression of the architectural theme.



IMPORTANT FEATURES OF CHASE SEAMLOC CARPET

Seamloc carpet is made in but two widths, thirty-six inches and fifty-four inches. Due to the special Seamloc method of "locking" sections together with practically no seams showing, Seamloc gives the approximate effect of broadloom carpet or chenille yet there is no additional cost per sq. yard, regardless of the width desired.

There are seven stock Seamloc grades and twenty-three stock colors, representing the dominant trends in today's most successful and popular floor coverings. In two qualities, Seamloc may be obtained in any color under the sun on ten days' delivery and at no additional cost per square yard on orders of twelve square yards or more. This is an unprecedented service in carpet of this kind. The interior architect has in Seamloc, unlimited opportunities to satisfy his clients on the color score.

It is easy to install Seamloc carpet. Excellent results have been achieved by men who had no previous experience with the material. As an aid to architects, work rooms throughout the country have been properly instructed to install Seamloc carpet and L. C. CHASE & COMPANY has key men to supervise major installations. Seamloc, if properly laid at first, requires no re-servicing.

One reason for this is that the special backing does not stretch and does not shrink. It contains absolutely no rubber or other substance which will harden or oxidize. The back is waterproof, dustproof and vermin proof. Seamloc may be washed while on the floor or sent to the carpet cleaners without fear of damage.

If sections of Seamloc become damaged by cigarette or cigar burns or other causes after laying, the ruined portions may be cut out and new carpet set in their place. Sections may be added to fit larger rooms or Seamloc may be cut off to fit smaller interiors. The extra material is easy to fabricate into attractive rugs.

Seamloc is ideal for plain, wall-to-wall installations of magnitude or for small, individual jobs. Trade marks, coats of arms or other distinctive insignia may be introduced into the carpet at slight cost and at a fraction of the expense that would be involved in a specially woven carpet. Seamloc lies flat on the floor. Its special backing prevents skidding. If necessary, fasteners may be sewed to the backing. It is easily adapted to practically any interior and is so easily and completely salvaged that the same carpet may be used successively on floors of any shape or size. In recapitulation, the outstanding features of Seamloc carpet are:

SEAMLOC ADVANTAGES AT A GLANCE

(1) Unlimited possibilities for special designs and color combinations in a durable, soft-pile floor covering.
(2) Elimination of eighty per cent of the usual carpet waste.
(3) Wide quality and color range including unlimited color offering in two qualities at no additional cost.
(4) Elimination of sewing, binding and re-servicing.
(5) Back eliminates shrinking and stretching. Protection against water, dust and insects.
(6) Ease of alterations after Seamloc is laid, either for repair purposes or for change of design.
(7) Surpassing strength of Seamloc seams which are stronger than sewn seams. Tensile tests show that Seamloc joints stand a pull of more than seventy pounds to the square inch.
(8) Practical elimination of welt sewn seams. Complete elimination of bulging joints, thereby insuring longer wear and greater ease in moving furniture.
(9) Greater wool content of Seamloc due to elimination of jute or other filler. Best possible carpet yarns used.
(10) Suitability of Seamloc to all installations including steamships, damp cellars, hospitals and all commercial interiors where carpet is used.
(11) Chase special service to architects.

SUPERIOR DISTRIBUTION SERVICE ON SEAMLOC

Chase Seamloc carpet is sold exclusively by L. C. CHASE & COMPANY through leading jobbers, cut-order houses, contract departments and retail departments of leading stores throughout the country. In territory adjacent to Chicago, New York and Los Angeles, twenty-four hour deliverey service is assured. In preparing estimates and designs for any installation from the largest to the smallest, architects have the facilities of L. C. CHASE & COMPANY and their distributors. From the standpoint of service, cost, installation, salvage and expression of individual ideas and the realization of necessary functions in floor coverings, Chase Seamloc is the carpet of special value to the architect and L. C. CHASE & COMPANY has developed an efficient supply and installation service especially suited to the architect's needs.



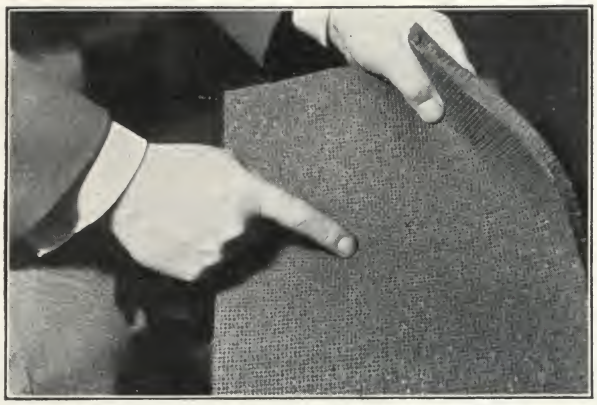
Fig. 1
The first step in joining two pieces of Seamloc is to lay the carpet face down and butt the two edges firmly together, holding the pieces in place with tacks or brads



Left:

Fig. 2
Next, apply Seamloc Cement uniformly along the joint. Use Seamloc cement only. The special spreader simplifies the task and helps to save cement

SEAMLOC CONSTRUCTION AND LAYING



No Shrinkage—No Stretching—Waterproof

This is the tough, wear-resisting, waterproof back of Seamloc. The back is coated with a composition which locks every tuft of pile securely into the weave. It is guaranteed against deterioration. It will not oxidize nor harden. It is water-tight, and practically air and dustproof. There is no jute in Seamloc. The pile is 100% pure wool.



Fig. 3
Now apply the Seamloc Tape, laying it firmly, smooth and straight upon the Seamloc cement. Use Seamloc tape exclusively because of its surpassing strength



Right:

Fig. 4
Over the tape apply another coating of Seamloc cement. Leave the carpet face down for 10 minutes or so to insure thorough setting—and the job is done

MOHAWK CARPET MILLS

MILLS AT
AMSTERDAM, N. Y.

GENERAL SALES OFFICES: 295 Fifth Avenue, NEW YORK, N. Y.

REGIONAL SALES OFFICES

ATLANTA, GA., Henry Grady Building, 26 Cain Street
BOSTON, MASS., Harvey Building, 52 Chauncy Street
CHICAGO, ILL., Lytton Building, 14 E. Jackson Boulevard
DALLAS, TEX., Santa Fé Building, 1114-28 Commerce Building
DENVER, COLO., 1745 Wazee Street
DES MOINES, IOWA, % Hotel Fort Des Moines, 10th and Walnut Streets
DETROIT, MICH., 2710 Book Tower Building
LOS ANGELES, CAL., Spreckels Building, 714 So. Hill Street
PHILADELPHIA, PA., Public Ledger Building, 6th and Chestnut Streets
SAN FRANCISCO, CAL., Furniture Exchange, 180 New Montgomery Street
SEATTLE, WASH., 808 Howell Street
ST. LOUIS, MO., Paul Brown Building, 9th and Olive Streets

THE ARCHITECT'S INCREASING INTEREST IN FLOOR COVERINGS

Every year, architects are taking more interest in the selection of rugs and carpets to be used in the buildings they have created. This is probably due to two factors: the client's desire to take advantage of the architect's knowledge of decorative principles; and the architect's desire to prevent his creations from being impaired by the use of floor coverings that are unsuitable in color, design or quality.

There has developed a growing appreciation of the fact that a careless choice of furnishings may spoil the effect of the finest interior architecture, and surely no one is better fitted to assist in the choice of furnishings that will reflect the spirit of a fine building than the architect who created it.

Therefore the architect's advice in the selection of floor coverings has come to be valued as it is in the choice of hardware, lighting equipment and other elements of a room.

Selection of Carpets and Rugs

The selection of a reliable manufacturer is especially important when the buyer is unfamiliar with the many technicalities of carpet and rug construction. The reputation of the MOHAWK CARPET MILLS is founded upon more than 50 years' experience in the manufacture of rugs and carpets which are giving lasting service and satisfaction in hundreds of America's large institutions.

The MOHAWK CARPET MILLS, controlling the entire manufacturing process of its rugs and carpets, including the production of its own yarns and the building of its looms, can—and does—guarantee its products against defects in material and workmanship.

Mohawk Service for Architects

Because the selection of suitable rugs and carpets involves many technical problems, the architect will find it advisable, whenever a large yardage is being considered, to consult a carpet specialist.

Upon request the MOHAWK CARPET MILLS will send, without obligation, a trained expert to go over your plans and advise types of floor coverings best suited for each particular requirement. He will submit samples of various fabrics, estimate yardages required and the cost. You will be shown a wide assortment of stock patterns and, if necessary, the Mohawk design departments will prepare special designs, harmonizing in motif and color with the interior architecture and decoration.

Prices quoted will be based on production costs as low as those of any American mill. Delivery dates will be clearly specified and strictly adhered to, subject of course, to conditions beyond our control.

This service is rendered in co-operation with local dealers or contract supply houses whose services are also available at no additional cost to you.

Types of Domestic Carpets and Rugs

There are four main types of weaves made and sold in the United States—Chenille, Wilton, Axminster and Velvet.

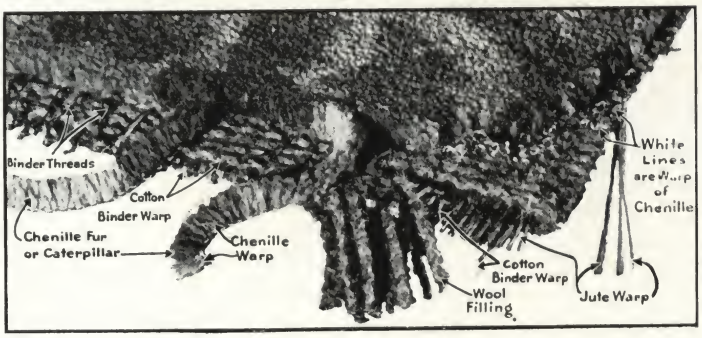
The MOHAWK CARPET MILLS produces all these weaves in a wide variety of grades and maintains extensive design departments that can meet any requirements as to pattern and color.

On the following pages we explain in detail the advantages of, and major differences between, the above mentioned types.

CHENILLE

A Domestic Floor Covering of Unlimited Possibilities

Chenille is the aristocrat of American floor coverings, a luxury fabric of unlimited decorative possibilities, especially appreciated by those who really know fine rugs and carpets. Mohawk Chenille has proved its worth in many of the country's largest theatres, hotels and other institutions, as well as in the finest private homes.



Chenille Construction

Chenille can be woven in a wide range of qualities and made to order, in a comparatively short time, to fulfill any special requirement of shape, size, color and pattern.

Any desired motif, coat of arms, trade-mark or other insignia may be used in a Chenille design.

Chenille can be woven to duplicate the contour of any room without cutting; fitting around alcoves, bay windows, fireplaces and other irregularities. It can even be woven to fit spiral or winding staircases.

Without restrictions as to shape, size, coloring or design and with a possible depth of pile of an inch or more, Chenille is the most adaptable of all woven floor coverings.

Recommended Use

Architects and interior decorators familiar with the possibilities of Chenille recommend its use in hotels, theatres, public buildings, club houses, offices and homes.

It is recommended for use wherever distinctive charm, quality and the expression of personality in floor coverings are primary considerations.

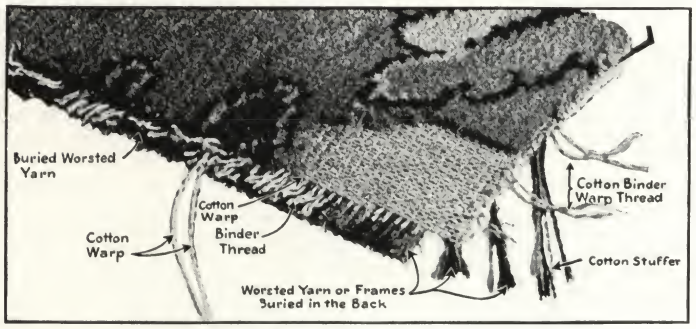
The Mohawk Carpet Mills is prepared to render prompt service in submitting sketches for Chenille design in harmony with any style of decoration.

Let our carpet experts help you with your Chenille problems.

WILTON

A Carpet of Assured Quality—Worsted or Wool

Next to Chenille, Wilton is the highest weave in regard to quality and price. This is the weave which is commonly said to have a buried or hidden value. By this is meant that a portion of the yarn used in the fabric is buried in the back, insuring resiliency and long wear.



Wilton Construction

Wilton is woven in a manner similar to the old Brussels weave, now seldom made or used. In the better grades, the Wilton is regarded by many as the best of all machine-made carpets.

The Wilton weave is made in two types, the Worsted Wilton and the Wool Wilton.

The Worsted Wilton

In Worsted Wilton, the surface yarns are spun from wool from which the short, curly fibres have been combed, leaving only the long, stiff, smooth fibres, which are given a hard twist. The result is a fine texture, possessing great resiliency and lending itself to a very smooth finish and fine detail in design.

The Wool Wilton

In Wool Wiltons, the surface yarn is spun from uncombed wool, resulting in a soft yarn considerably thicker than worsted. The texture is not as fine as worsted, the fabric heavier, and the finish softer.

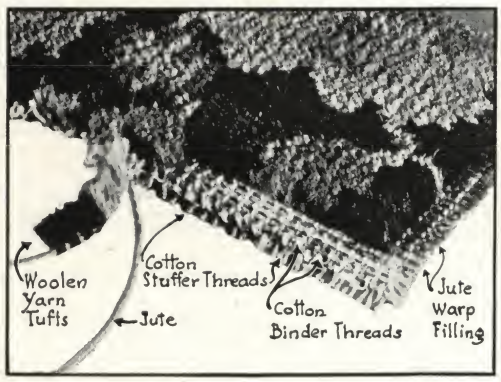
Saxony Wool Wilton is characterized by extra thick yarn and a high pile, woven on a Wilton loom, producing a fabric of extra thickness and strength, almost indestructible in durability, but retaining all of the beauty of design and color harmonies made possible by the Jacquard process.

AXMINSTER

A Carpet of Sturdy Weave and Wide Popularity

The Axminster weave has a greater yardage production than any other weave in America. It is woven today up to 12 ft. wide, seamless.

In the accompanying photograph, showing the general construction, the two threads of the chain warp, holding one row of tufts, are shown pulled out from the body of the fabric. The upper thread is shown at the left, passing through the centre of the tufts. The lower thread, which is directly under the other in the fabric construction, helping to hold the tufts, is pulled apart to the right. The jute weft shot binds them in securely.



Axminster Construction

Weaving

In the process of preparing the yarns, each color to be used in the rug is first wound on 27-in. spools.

The spools are placed in steel frames and hung in a continuous sprocket chain, in the loom, and the chain being motor operated, carries the spools forward in proper succession to steel arms. These arms lift a row of spools from the chain and bring the yarn ends down into the upper chain warp. They are then bound into the fabric with a weft shot, the ends are turned up and cut off by broad knives and the spools return to the chain. The arms then reach for the next row and repeat the process.

Backs of Axminster Rugs

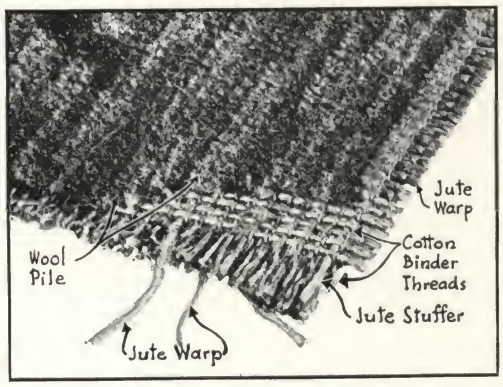
The back of an Axminster is distinctive on account of the jute weft and cotton warp yarns. The wires, or rows, can be easily measured and counted in the number of double jute strands in the back. Seven rows wide to the inch is generally standard for the medium grade. The comparative qualities of the same manufacturer can be judged by the character of the yarn, the thickness of the fabric and the number of shots to the inch in the weave, and the number of rows across.

VELVET

A Carpet Recommended Where Service and Price Are Deciding Factors

Velvet, in the better qualities, resembles Wilton in appearance, but has more possibilities in color. It does not have the structural quality of the Wilton as there is no buried wool in the jute back, and it is not made on a Jacquard loom. Only one kind of surface yarn is used but this has to be of good quality and of the same grade throughout in order to take the various dyes properly.

Each yarn is wound on a separate spool and arranged in its proper order on a creel and drawn between two tapestry setters. They set the yarn every few feet and the pattern can actually be seen on the surface. The pattern as seen is elongated over three times its actual length in the finished fabric, as it is shortened by the pile wires in the weaving.



Velvet Construction

Jute yarn, which has been sized, is used for weight and strength as a stuffer in this weave. Although Velvet is the cheapest of the four popular weaves, it requires the use of a high quality of yarn and the better grades give excellent service.

Mohawk weaves Velvets up to 15 ft. wide, seamless, in a broad range of grades and designs and in plain colors.

MOHAWK "CAPITAL" BROADLOOM CARPET

Mohawk "Capital" Broadloom Carpets are contributing their charm, and service to very many interiors of distinction. They are made in eight widths, from 27 inches to 18 feet, and in 25 various shades and colors.

With this wide range of fabrics it is possible to cover any floor in beautiful single-tone, seamless carpeting from wall to wall. Mohawk "Capital" Broadloom Carpet is a durable, deep-piled fabric made from a twisted yarn which gives it great resiliency.

Capital carpet is used in many of the finest homes, clubs, hotels, offices and theatres in the country.

Widths are 2 ft. 3 in.; 3 ft.; 4 ft. 6 in.; 9 ft.; 10 ft. 6 in.; 12 ft. and 18 ft.

Colors are—taupe, natural, fawn, peach, Burma rose, briar, Castilian red, taupe lake, heather mist, rose taupe, jade green, blue, raisin, black, forest green, mulberry, burgundy, ashes of roses, beige, gold, antique blue, copper, sage green and turquoise blue.

MOHAWK IMPERIAL ROCKTON

Imperial Rockton is an exceptionally high quality of Velvet carpet, woven of extra hard-twisted yarn. The use of this type of yarn produces an unusual surface texture and gives the fabric extreme durability.

Imperial Rockton is recommended for all installations and especially for hotels, clubs and private homes where distinctive appearance, quality and long wear are required. It is available in copper, rose, jade green, taupe, raisin, burgundy and other popular plain colors in 2 ft. 3 in., 9 ft. and 12 ft. widths.

TYPES AND QUALITIES OF CARPETS SUGGESTED FOR VARIOUS SERVICES

The Carpets Are Arranged in Groups According to Quality

Location	1st Quality	2nd Quality
Banks and Business Offices		
Directors' room	Chenille	Saxony, Imperial Rockton Broadloom
Private offices	Chenille	Saxony, Imperial Rockton Broadloom
Churches		
Aisles	Braeside Wool Wilton	Madison Wool Wilton
Meeting rooms	Braeside Wool Wilton	Madison Wool Wilton
Hotels and Clubs		
Bedrooms	Kenmore Worsted Wilton	Madison Wool Wilton
Corridors	Saxony	Braeside Wool Wilton
Dining rooms	Saxony	Braeside Wool Wilton
Lobby	Loom Tufted	Saxony
Public spaces	Saxony	Braeside Wool Wilton
Institutions		
Bedrooms	Kilmarnock Worsted Wilton	Kenmore Worsted Wilton
Corridors	Saxony	Braeside Wool Wilton
Dining rooms	Saxony	Braeside Wool Wilton
Main entrance hall	Loom Tufted	Saxony
Stairs	Gordon Wool Wilton	Brentmore Wool Wilton
Railroads	Kilmarnock Worsted Wilton	Kenmore Worsted Wilton
Residences		
Bedrooms	Stock Chenille	Capital Broadloom, Montroyal Wool
Dining room	Special Design Chenille	Saxony, Kilmarnock Worsted Wilton, Mohawk Imperial Axminster
Halls	Special Design Chenille	Saxony, Kilmarnock Worsted Wilton, Mohawk Imperial Axminster
Living room	Special Design Chenille	Saxony, Kilmarnock Worsted Wilton, Mohawk Imperial Axminster
Music room	Special Design Chenille	Saxony, Kilmarnock Worsted Wilton, Mohawk Imperial Axminster
Servants' rooms	Hard Service Axminster	Broadalbin
Service stairs	Capital Heather	Broadalbin
Stairs	Special Design Chenille	Saxony, Kilmarnock Worsted Wilton, Kenmore Worsted Wilton
Steamships		
Cabins		
Deluxe	Brocade Wool Wilton	Kenmore Worsted Wilton
1st Class	Kenmore Worsted Wilton	Kinross Worsted Wilton
2nd Class	Kinross Worsted Wilton	Madison Wool Wilton
3rd Class	Madison Wool Wilton	Tampa Axminster
Companionways and corridors	Mohawk Saxony	Gordon Wool Wilton
Dining salons	Saxony	Braeside Wool Wilton
Lounge	Mohawk Saxony	Glenburn Wool Wilton
Main salon	Saxony	Glenburn Wool Wilton
Smoking rooms	Capital Broadloom	Broadalbin
Theaters		
Auditorium	Saxony	Scotia Velvet
Lobby	Special Design Chenille	Saxony
Lounge, dressing rooms, etc.	Saxony	Tampa Axminster
Stairs	Saxony	Gordon Wool Wilton

RECENT INSTALLATIONS OF MOHAWK CARPETS

The following are only a few of the many prominent American institutions in which Mohawk Carpets are now serving:

Adolphus Hotel, Dallas, Tex.
Apache Hotel, Las Vegas, Nev.
Bank of Manhattan, New York, N. Y.
Belleview Country Club, Bellaire, Fla.
Boyertown Burial Casket Co., Brooklyn, N. Y.
Broadway Department Store, Los Angeles, Calif.
Butterfield Chain of Theatres in Michigan—Alpena, Grand Rapids, Detroit, Traverse City, Bay City
Cinema Theatre, Cleveland Ohio
Clovis Hotel, Clovis, N. M.
Colonial Hotel, New York, N. Y.
Cornell Medical Center, New York, N. Y.
Earle Theatre, Washington, D. C.
Eastman Kodak Co., Rochester, N. Y.
Empire State Luncheon Club, New York, N. Y.
Fairfax Hotel, Pittsburgh, Pa.
40 Wall Street Club, New York, N. Y.
Georgetown University, Washington, D. C.
Wm. Goodyear & Co., Ann Arbor, Mich.
Henderson Hotel Co., Henderson, Tex.
Holland Apartments, Los Angeles, Calif.
Hotel Alvarado, Chicago, Ill.
Hotel Antler, Miami Beach, Fla.
Hotel Carillo, Santa Barbara, Calif.
Hotel Black, Oklahoma City, Okla.
Hotel New Yorker, New York, N. Y.
Household Outfitting Co., Syracuse, N. Y.
Lord, Thomas & Logan, New York, N. Y.
McKenna Hotel, Tyler, Tex.
Maplewood Hotel, Maplewood, N. H.
Masonic Temple, Santiago, Calif.
Mayflower Hotel, Washington, D. C.
Meier & Frank Department Store, Portland, Ore.
Muncerey Apartments, Seattle, Wash.
National City Farmers' Loan & Trust Co., New York, N. Y.
Nebraska State Capitol, Lincoln, Neb.
New York Central R. R. Co., New York, N. Y.
Orpheum Theatre, Grand Forks, N. D.
Peddie Memorial Church, Newark, N. J.
Princess Anne Hotel, Washington, D. C.
Sach's Quality Furniture Co., New York, N. Y.
San Francisco War Memorial and Opera House, San Francisco, Calif.
Starrett's Netherland Plaza Hotel, Cincinnati, Ohio
State Theatre, Chicago, Ill.
Waldorf-Astoria Hotel, New York, N. Y.
Warner Bros. Chain of Theatres—Erie, Pa.; Youngstown, Ohio; Milwaukee, Wis.; Hagerstown, Md.; Washington, D. C.; Orange, N. J.
Western Universities Club, New York, N. Y.
Woodcraft Hospital, Riverside, Calif.

GENERAL EQUIPMENT

EDISON GENERAL ELECTRIC APPLIANCE CO., INC.

5600 West Taylor Street, CHICAGO, ILL.

For General Electric Hotpoint Electric Ranges and Water Heaters, see Manufacturers' Index

GENERAL ELECTRIC EDISON COMMERCIAL COOKING AND BAKING EQUIPMENT

A Complete Line

A complete line of electrically heated Baking and Roasting Ovens, Ranges, Broilers, Urns, Steam Tables, Stock and Fry Kettles, Griddles, Waffle Bakers, Egg Boilers, Grilles, and Toasters.

Catalogue and detailed specifications on each piece of equipment on request.

A GENERAL ELECTRIC ORGANIZATION

EDISON

Exclusive General Electric Edison Features

(1) Products are the result of 20 years' research and experience in electrical cooking and baking.

(2) Manufactured by the oldest and largest manufacturer of commercial electric cooking and baking equipment in the world.

(3) Heated by the famous Calrod element (construction shown in cut), the longest lived, most dependable and efficient electrical heating element known. Used exclusively in Edison Products.

(4) Most simple and dependable automatic temperature control mechanism on the market used in all automatic devices.

(5) More successful commercial installations than any other manufacturer.

(6) Most complete service facilities.

(7) Highly trained and experienced kitchen and electrical engineers and specialists equipped to give architects every aid.

Many Leading Architects Specify Edison Equipment

Because clean, efficient, flexible, and easily controlled, Edison Electric Equipment is in demand by leading food service operators.

Because the installation of electric cooking and baking equipment generally secures their clients a more favorable electric rate, or where power is locally produced, increases the efficiency of the generating plant by adding "off peak" load.

Because their clients can produce better, more uniform food with automatic temperature controlled Edison equipment.

Because depreciation and maintenance expense are materially reduced.

Because the problem of kitchen location and layout is simplified by reduction of requirements for ventilation and fuel supply.

Because a more efficient and compact layout is possible with Edison equipment, and provision for future expansion is simplified by the standardization and ease of installation of additional equipment.

Because Edison electric equipment is fire and explosion proof, reducing the hazard to life and property as well as loss of income.

Because only Edison equipment has service arrangements which are nation wide and a liberal service policy to support them.

Because only General Electric Edison has a complete line of all devices used in commercial cooking and baking, eliminating the necessity of purchasing equipment through many sources and gaining the advantage of single large orders and lump sum bids.

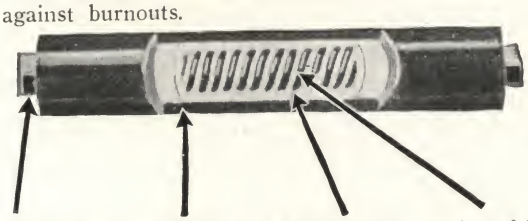
Because Edison experts and engineers can offer the architect definite assistance in planning kitchens from their wide experience with thousands of other installations. This assistance may include cost and wiring estimates, engineering aid, complete kitchen layouts, complete specifications, and sales help in presenting a proposal to a client or prospective client.

Co-operation with Architects

Edison specialists are in close touch with building, remodeling, and refitting jobs throughout the country. They have the confidence of many operators, large and small, and are often in a position to reciprocate the co-operation offered them by architects.

Calrod—The Long-Life Heating Element

The heating element shown in the cut is made of a helical coil of calorite resistance wire firmly bedded in granite, hard, thoroughly dessicated magnesium oxide, electrical insulator and heat conductor. Terminal posts are permanently attached and the junction with the resistance is permanently embedded in the insulation. The whole is protected by a seamless metal tubular sheath protecting it from mechanical shocks or electrical shorts. Calrod is mechanically strong, electrically safe, and proof against burnouts.



Terminal of heavy non-corrosive material threaded into resistance wire.

Protective metal casing.

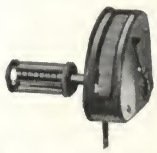
Magnesium oxide electrical insulator and heat conductor.

Resistor of Calorite, finest grade of Nickel Chromium wire, made to EDISON specifications.

The million-dollar General Electric invention, *Calrod*, used in General Electric Edison cooking equipment. It is practically indestructible.

Automatic Temperature Control

While it is human to err, man has developed machines which do not make mistakes. Automatic control of cooking and baking temperatures is as important in producing uniformly high quality products in the kitchen, pantry, or bake shop as the adding machine is in providing accurate figures in the office. And, like the adding machine, it saves labor, can be operated by less skillful help with excellent results, and provides accurate, uniform results. Also it saves in fuel costs by proportioning the amount of current used to the actual work done automatically.



Automatic Oven Temperature Control and Indicator

Edison temperature controls are simple, dependable, and durable, assuring maximum efficiency and a minimum of expense.



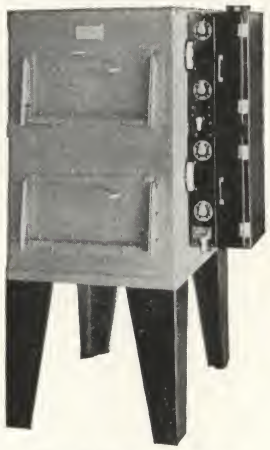


Typical GE-Edison Kitchens

Left:
Edison equipment in one of the Forum Cafeteria kitchens. All kitchens of this company, operating in Kansas City, St. Louis, Houston, Minneapolis and Cleveland, are so equipped

Right:
The three novel restaurants of the W. H. Childs' Company, New York, are Edison equipped, as shown in this kitchen at "Old London"

TYPICAL BAKING AND ROASTING OVENS



NA67—Automatic

Classification—Utility baking oven.

Dimensions—38 in. wide, 39 in. deep, 65½ in. high. Each compartment 18⅝ in. wide, 28¾ in. deep, 8 in. high.

Capacity—Baking area, 7 sq. ft. (20 1-lb. loaves).

Wattage and Voltage—5 kw. Standard voltage—110 or 220 (can be 120, 200 or 240) a-c. (single or 3-phase) or d-c. circuit.

Finish—Standard, battleship gray—black enamel trim. Special, white porcelain, monel, or nickel-chromium steel, with trim to match.



NA57—Automatic

Classification—"Ad-A-Deck" portable baking oven, sectional type.

Dimensions—62¼ in. wide, 75 in. deep, 77 in. high. Each compartment 37⅜ in. wide, 57 in. deep, 8 in. high.

Capacity—Baking area, 45 sq. ft. (120 1-lb. loaves).

Wattage and Voltage—16.2 kw. Standard voltage—110 and 220 (can be 120, 200 or 240) a-c. (single or 3-phase) or d-c. circuit.

Finish—Standard, battleship gray—black enamel trim. Special white porcelain, monel or nickel-chromium steel, with trim to match.



NA123—Automatic

Classification—"Ad-A-Deck" portable roasting oven, sectional type.

Dimensions—56⅝ in. wide, 40⅝ in. deep, 62 in. high. Each compartment 37⅜ in. wide, 28¾ in. deep, 12 in. high.

Capacity—Roasting area, 14 sq. ft. (250 lb. meat, or 40 1-lb. loaves).

Wattage and Voltage—10 kw. Standard voltage—110 or 220 (can be 120, 200 or 240) a-c. (single or 3-phase) or d-c. circuit.

Finish—Standard, battleship gray—black enamel trim. Special, white porcelain, monel, or nickel-chromium steel, with trim to match.

TYPICAL KITCHEN EQUIPMENT



442 R116
Cooking Top Only

Classification—Heavy duty cooking top. (Range also furnished with oven.)

Dimensions—48 in. wide, 43 in. deep, 31¼ in. high. Storage space, width 27 in., depth 29½ in., height, upper compartment 11¾ in., lower compartment 10 in.

Capacity—Area of hot plates, 6 sq. ft. Size of hot plate area, 24x36 in.

Wattage and Voltage—16 kw. Standard voltage—110 or 220 (can be 120, 200 or 240) a-c. (single or 3-phase) or d-c. circuit.

Finish—Black enamel.



435 K11

Classification—Stock kettle.

Dimensions—24 in. wide, 27 in. deep, 44¼ in. high. Diameter of container, 18¾ in.

Capacity—20 gal.

Wattage and Voltage—5 kw. Standard voltage—110 or 220 (can be 120, 200 or 240) a-c. (single phase) or d-c. circuit.

Finish—Body—black enamel; top—polished nickel.



434 KA15—Automatic

Classification—Fry kettle.

Dimensions—18¼ in. wide, 28¼ in. deep, 31¼ in. high. Grease container 12 in. long, 16 in. wide.

Capacity—Fat—45 lb.

Wattage and Voltage—4 kw. Standard voltage—110 or 220 (can be 120, 200 or 240) a-c. (single or 3-phase) or d-c. circuit.

Finish—Standard, black japan—polished steel top. Special, polished monel—nickel trim.

EDISON GENERAL ELECTRIC APPLIANCE CO., INC.

5600 West Taylor Street, CHICAGO, ILL.

Products

GENERAL ELECTRIC HOTPOINT ELECTRIC RANGES for residences and apartments. Furnished in many sizes and designs to meet varied demands. GE-Hotpoint maintains complete stocks of Electric Ranges in warehouses in 60 strategically located cities throughout the U. S. A.; 24-hour delivery service on standard models. Detailed information furnished upon request.

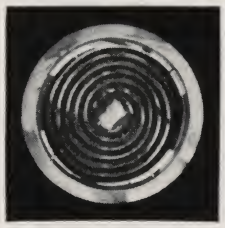
For GE-Edison Electric Commercial Cooking and Baking Equipment, and GE-Hotpoint Electric Water Heaters, see Manufacturers' Index.

A GENERAL ELECTRIC ORGANIZATION

Hotpoint

Electric Cookery Advantage

Just as surely as the incandescent electric lamp replaced all other methods of lighting, Electric Cookery is destined to replace all existing methods of cooking—and for the same reasons. Electric Cookery with the highly efficient GE-Hotpoint Range is Modern, Fast, Convenient and Economical. This better method of cookery is rapidly gaining in popularity. Right now in this country there are over a million Electric Ranges in use in homes and apartment houses. It is significant that almost half of these ranges are GE-Hotpoint.



Hi-Speed Calrod, the Million Dollar Heating Coil

Consider these amazing facts about GE-Hotpoint Electric Cookery: 1—Ten pounds of potatoes can be cooked with only *one* cup of water. 2—The cost of cooking Electrically on a GE-Hotpoint Range is less than 1c a meal per person (national average). 3—A housewife can automatically cook dinner for the entire family on a GE-Hotpoint Range while miles away from her home. 4—Even in the smaller kitchens, now becoming so popular, the housewife enjoys coolness and comfort. All of the heat generated by the GE-Hotpoint Range is utilized for cooking, none is dissipated to raise the room temperature.

Distinctive Features

Hi-Speed-Calrod Surface Units—An exclusive GE-Hotpoint feature. The most durable, most satisfactory and efficient electric range surface units. Quick heating, efficient and economical. Made in two sizes—Giant (8½ in. dia.) 2100-1050-525 watts—Utility (6½ in. dia.) 1200-600-300 watts. Hi-Speed Calrod Units are standard equipment on all GE-Hotpoint ranges. Open coil or Cast-In-Calrod units may be substituted where specified.

Cast-In-Calrod consists of a helical coil of Calrod cast within a smooth top, solid metal plate.

Calrod Oven Units—The majority of GE-Hotpoint Ranges are equipped with durable, efficient Calrod oven units.

GE-Telechron Electric Timer-Clock—Turns the oven on and off automatically. Also serves as a reliable timepiece. For use with automatic ranges (at slight additional cost).

Modern Design—Beautiful in appearance, with clean smooth lines; no protruding fittings or exposed screw heads. Flat, flush doors and switch panels.

Automatic Precision Temperature Control and Indicating Thermometer (on most models)—Maintains the proper even temperature at all times. Eliminates all guesswork.

Channel Steel Frames—Unusually strong and rigid.

Designed For Easy Servicing—Simplified construction, all vital parts easy to reach.

Electric Fused Porcelain Enamel—Triple fired, insures permanent lustre and durability. The oven top and cooking top on practically all models are finished in *stainless* porcelain enamel.

TECHNICAL INFORMATION

Underwriters' Laboratories' Approval

All Hotpoint ranges are listed as standard by the Underwriters' Laboratories, Inc.

Wiring for Hotpoint Ranges

Each range must be supplied through a separate branch circuit. (Rule 1602-e—1925 N.E.C.) This should preferably be a 110-220-volt, 3-wire circuit. The circuit to each range must be controlled by an accessible indicating switch. The service switch may be used for this purpose. In the Multi-Family dwelling, a switch should be in the apartment, or on the same floor of the apartment in which the range is installed and may control the lights and other appliances. (1928 N.E.C. Rule 1603) (A-3). This switch does not need to be within sight of the range. If the range connection is made with a three-wire plug and receptacle, the requirement of this switch is generally waived.

When only single conductor, single braid, solid wire is used, the following conduit sizes may be used (Rule 503m—1925 N.E.C.):

3—No. 12 wires in ½-in. conduit
3—No. 10 wires in ¾-in. conduit (standard)
3—No. 8 wires in ¾-in. conduit
3—No. 6 wires in 1-in. conduit (recently approved)

Demand factor. Electric ranges seldom are used at their full name plate rating. Many city electrical inspection codes allow the use of a demand factor in determining the size of service wires, switchboards and feeders supplying electric ranges.

RANGE LOADS

Number of Ranges		Number of Ranges	
1 to 2	100%	10	52%
5	85%	15	40%
8	65%	Over 25	30%

For safety reasons it is essential that all range frames be thoroughly grounded. A ground connection to the conduit supplying the range is considered satisfactory.

The various heating units in electric ranges are not required to be separately fused. (Rule 1605-d—N.E.C. 1928.) The larger Hotpoint ranges have individual fuses for convenience.

Metering

In many cities a low wholesale rate for electric service makes it desirable for the apartment owner to purchase all of the power for lighting, ranges, elevators, etc., through one meter and include the cost of power for cooking in the rent. In other cities a low rate for cooking is available to individual small customers which make it desirable for each apartment to be separately metered, particularly as lighting and cooking power is generally supplied through the same meters, and each tenant thus assumes the operating cost.

Power Demand and Consumption

The National Electric Light Association has recently completed a very complete study of the load characteristics of groups of electric ranges. Demand—for ranges in detached houses with an average nameplate rating of 6.44 kw., the maximum demand per range was found to be as follows:

Number of range customers	1	5	10	20	40	80	150
Average maximum demand per range, kw.	3.61	1.75	1.36	1.13	1.00	.89	.86

Tests made in six apartment buildings in Seattle totaling 284 ranges showed a maximum demand of .87 kw. per range.

Kilowatt-Hour Consumption

The average power used by an electric range installed in homes has been found to be very closely 1500 kilowatt-hours per year. The N.E.L.A. report shows an average of 1424 kilowatt-hours per year for the homes that were studied. Of course, wide variations from this are to be expected.

Separately metered three and four-room apartments show a substantially lower consumption. Six apartment buildings in Seattle were carefully checked and an average consumption of 90 kilowatt-hours per apartment per month was found. Other tests indicate an average consumption per apartment of 80 to 100 kilowatt-hours per month.

ELECTRIC RANGES FOR RESIDENCES AND APARTMENTS



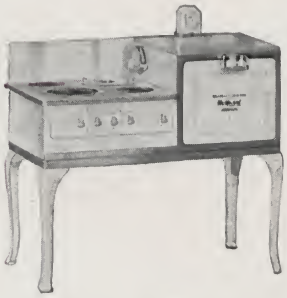
Model RA69

The Hostess, popular new console model, combining all of newest and most desirable GE-Hotpoint features including three Hi-Speed Calrod Surface Units, Thrift Cooker, extra large size automatic oven, 16 in. wide x 14 in. high x 19 in. deep; new extension type sliding oven shelves, separate warming compartment, utility drawer, elevated lamp, two appliance outlets—one is timer controlled. Size of range 45 in. long x 26½ in. deep. Height over all, 52 in.



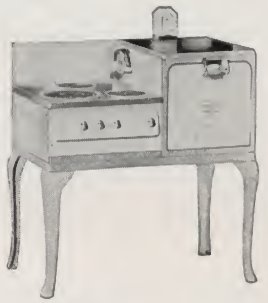
Model RA59

This handsome new model, the Lenox, has the same modern features as the Hostess above, with the exception of the separate warming compartment and utility drawer. The Lenox has an extra large capacity automatic oven, 16 in. wide x 14 in. high x 19 in. deep, with new extension type sliding shelves and large smokeless broiler pan. Size of range—45 in. long x 26¼ in. deep. Height over all, 52 in.



Model RA146

One of GE-Hotpoint's fastest selling popular priced moels. A full size electric range with three Hi-Speed Calrod Surface Units and Thrift Cooker; large size automatic oven, 16 in. wide x 14 in. high x 18 in. deep. Like all GE-Hotpoint Ranges, the oven is thoroughly and efficiently insulated and its interior is finished in pebbled blue porcelain enamel.



Model RA134

This range has gained unrivaled popularity for both residential and apartment house installation. It is attractive in appearance, and the price is low. Features include three Hi-Speed Calrod Surface Units; porcelain enameled oven of generous capacity, 14 in. wide x 14 in. high x 18 in. deep. The oven is fully automatic. For outline and dimensions, see drawing at right, above.



Model R113

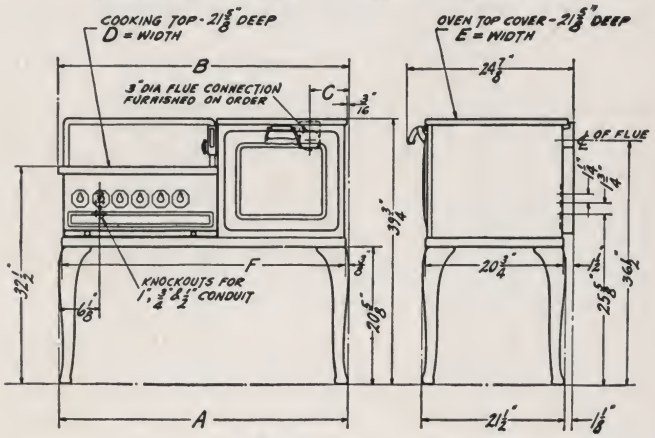
Specially designed for use in the small apartment or summer cottage, this range is compact in size and has ample cooking capacity for the small family. Equipment includes three Hi-Speed Calrod Surface Units and generous size oven, 14 in. wide x 14 in. high x 15 in. deep. The oven is non-automatic and has an indicating thermometer on front of door panel. Can be furnished with automatic oven, upon special order. Range can also be furnished in white porcelain enamel, upon special order. For outline and dimensions, see drawing at right, above.



Model RA150

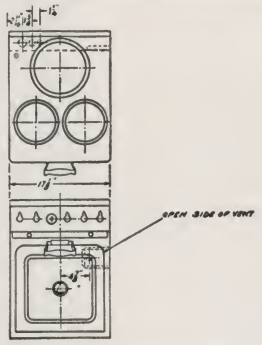
This new range for the small apartment kitchen is unusually compact and serviceable. It performs every cooking operation that a larger GE-Hotpoint Range can do and with equal satisfaction. Automatic oven temperature regulation is provided as an integral part of the oven unit. The range has a total connected load of only 3600 watts which permits a considerable saving on wiring costs and reduces demand. The price is unusually low. See two drawings at right.

Outline and Dimensions of Models RA134 and RA146

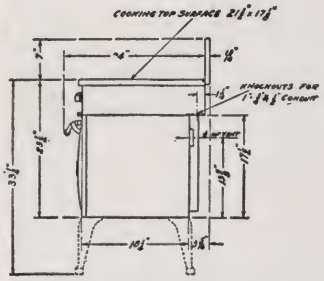


	A	B	C R. H. Range	C L. H. Range	D	E	F
RA134	38	38¼	41 13/16	13 5/16	20½	17¾	37¼
RA146	43½	43¾	51 13/16	14 5/16	24	19¾	42¾

Right hand range is shown. Left hand range is reverse of view shown.



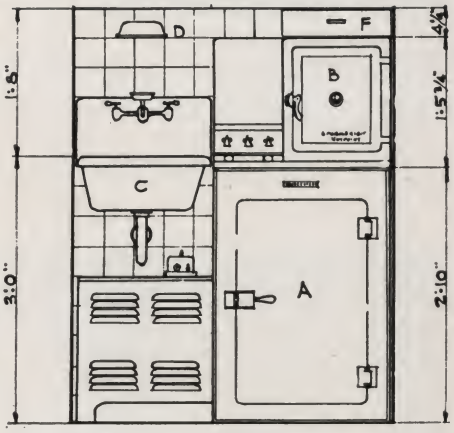
Outline and Dimensions of Model R113



Drawing at Right Shows Model RA150 Range Installed on Top of GE Refrigerator Model SD35

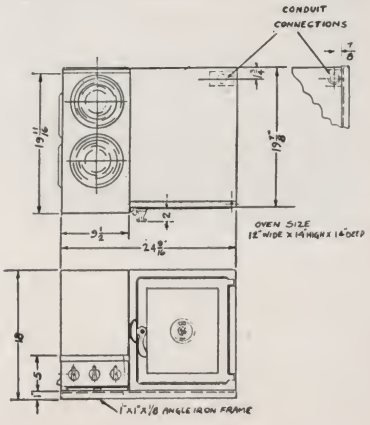
A—SD35 Refrigerator
B—RA150 Range
C—1 ft. 6-in. x 1 ft. 8-in. Sink
D—Bracket Light
F—Drawer

This arrangement is for kitchen 3 ft. 7 in. wide by 2 ft. 4 in. deep.



At right:

Outline and Dimensions Model RA150 Range



STANDARD GAS EQUIPMENT CORPORATION

Manufacturers of Gas Ranges and Appliances

18 East 41st Street, NEW YORK, N. Y.

CABLE ADDRESS
"Vulcan, New York"

NEW ENGLAND OFFICE, 100 Arlington Street, Boston, Mass.
WESTERN OFFICE, 122 So. Michigan Avenue, Chicago, Ill.
FACTORIES AND FOUNDRIES: JERSEY CITY, N. J., BALTIMORE, MD., AURORA, ILL., BIRMINGHAM, ALA.
PACIFIC COAST DISTRIBUTORS: Northwest Gas & Electric Equipment Co., PORTLAND, ORE., LOS ANGELES, CAL.

Products

SMOOTHTOP, ORIOLE, VULCAN and ACORN DOMESTIC GAS RANGES; VULCAN GAS RANGES for hotels, restaurants, clubs, hospitals, schools, institutions, etc.

Also manufacturers of Deep Fat Fryers, Bake Ovens, Broilers, Griddles, Bakers' and Confectioners' Stoves, Industrial Burners.

Equipment can be used with manufactured, natural, butane and bottled gases.

SMOOTHTOP GAS RANGES

Smoothtop Ranges are recognized as one of the most advanced types of cooking appliances. They have greater capacity, yet take less space than ordinary ranges. Smart, distinctive appearance.

Many exclusive features. Large closed top, all of which is cooking surface. One burner will cook four vessels—a whole meal—and keep it hot. Well lighted top—no oven in the way. Removing lids speeds cooking. Oven heat control. Burners light automatically when turned on. Insulated oven optional. De Luxe construction. Approved by American Gas Association, Good Housekeeping Institute and others.

Sold by gas companies, dealers, or direct if no dealer.

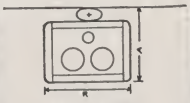
Descriptive catalogue sent on request.

Specifications.—Furnish and set, complete with gas connections, Smoothtop Gas Ranges as made by STANDARD GAS EQUIPMENT CORPORATION, New York, N. Y., as per schedule.

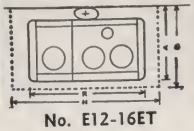


Smoothtop No. E18 ET

Full enamel finish insulated or non-insulated, supplied also in color, semi-enamel and standard finishes. Closed top heated by two speed burners in front and one junior burner in rear. Entire top is cooking area, having four cooking zones. Duplex oven and broiler of large capacity



No. E18ET
Oven,
18x19x14 in.
For complete dimensions of range see table below



No. E12-16ET
Oven,
16x19x13 in.
Broiler,
10x19x13 in.



Smoothtop No. E12-16 ET

Full enamel finish, supplied also in semi-enamel finish. Closed top heated by three speed burners in front and one junior in rear. Entire top is cooking area having four cooking zones—speed, moderate, simmering and warming. Large oven and separate broiler. Exceedingly compact and moderately priced

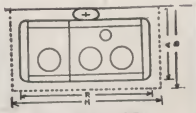


Smoothtop with Warming Closet

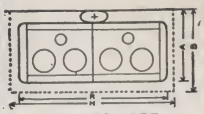


Smoothtop No. E12-18 ET

Full enamel (insulated or non-insulated). Also supplied in color, semi-enamel and standard finishes. Top is heated by three speed burners in front and one junior in rear. Has ample capacity for large families. Top will accommodate 8 large vessels. Warming closet supplied if desired



No. E12-18ET
Oven,
18x19x14 in.
Broiler,
11¾x19x14 in.
For complete dimensions see table opposite

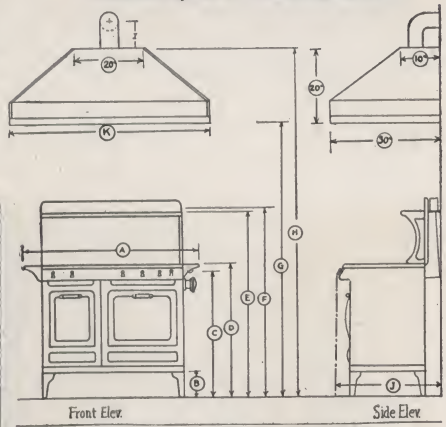


No. E18-18ET
Ovens (2),
18x19x14 in.
For complete dimensions see table opposite



Smoothtop No. E18-18 ET

The largest of the Smoothtop line. Supplied in full enamel (insulated or non-insulated), and in color. Also semi-enamel and standard finishes. Top equipped with six burners, four speed burners in front and two junior burners in rear. Two large ovens, one of which is both baking and broiling oven



DIMENSION DIAGRAM OF RANGES

Dimensions	Range Numbers					
	E-18	E-12-16	E-12-18	E-12-18W	E-18-18	E-18-18W
A-1	32	42¾	48¼	48¼	54½	54½
A-2	26	36¾	42¼	42¼	49	49
B	8½	9½	8½	8½	8½	8½
C	35½	35½	35½	35½	35½	35½
D	36	36	36	36	36	36
E	50¼	50¼	50¼	50¼	50¼	50¼
F	49½	49½	49½	49½	49½	49½
G	74	74	74	74	74	74
H	94	94	94	94	94	94
I	6″	6″	6″	6″	6″	6″
J	26½	26½	26½	26½	26½	26½
K	38″	49″	54″	54″	60″	60″

Note: A-1 shows dimension with End Shelves. A-2 shows dimension without End Shelves. For Heat Control without end shelves add 1½ in. to A-2.

All Smoothtop Ranges can be supplied with or without Oven Heat Control

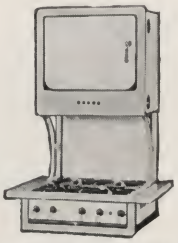
APARTMENT RANGES FOR EVERY REQUIREMENT

In addition to the hundreds of gas ranges in its regular lines, STANDARD GAS EQUIPMENT CORPORATION has a number specially designed to meet the exacting requirements of apartments. An amazing amount of cooking and storage capacity is packed into 20-in. space for small apartments. A wide variety of ranges are available for apartments of moderate size. For apartments where cooking requirements are heavy, there are special ranges. Vulcan heavy duty domestic type ranges are frequently used for large apartments or residences. *Only a few types are shown here and on preceding page. Ask for catalogue.*



Compact Apartment Range No. B-16

Especially adapted for built-in cabinet work. Four burner cooking top, 19½x20½ ins.; duplex oven-broiler, 16x18x12 ins. May be had without broiling burner. Utensil drawer at bottom. Floor space, 20 ins. wide x 24 ins. deep. Height, 55 ins. Insulated oven optional. High shelf optional. Two finishes



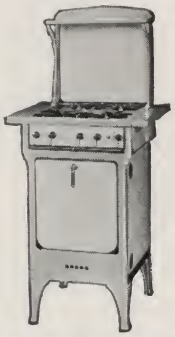
Duplex Oven Kitchenette Range No. B-61

Can be set on cabinet. Provides four burner cooking top of standard size, and duplex oven-broiler. Two finishes. Floor space without end shelves, 20 ins. wide, 23 ins. deep. Add 5 ins. for end shelves. Height 39½ ins. May be used with range Nos. B-14 and B-16 to provide additional oven-broiler capacity



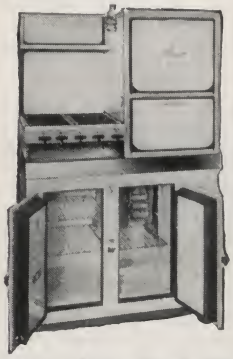
Duplex Oven Kitchenette Range No. B-61 UB

Provides maximum cooking and storage capacity in 20-in. space. Cooking top, 19½x20½ ins.; duplex oven-broiler, 16x12x12 ins.; shelf, cutlery drawer, utensil cupboard. End shelves optional. Two finishes. Floor space, 20 ins. wide, 23 ins. deep (end shelves 5 ins. extra). Height, 65½ ins.



Compact Single Oven Range No. B-14

Suitable where other storage space is provided and it is desired to have oven below cooking top. Cooking top, 19½x20½ ins.; oven, 14x18x14 ins. Broiling burner optional. Floor space, 20 ins. wide x 23 ins. deep (end shelves 5 ins. extra). Height, 53 ins. Two finishes. High shelf optional



Refrigerator Range No. A-2016 ET

Sets over Electrolux gas refrigerator, saving space. Bottom insulated. Four burner cooking top, 19x21 ins.; oven (insulation optional), 16x18½x14 ins. Separate broiler. Oven heat control if desired. Floor space, 38¼ ins. wide x 24½ ins. deep. Height over all, 60¼ ins. Two finishes



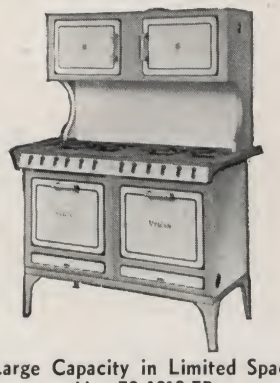
Six-burner Cabinet Range No. 6-910-2 T

Especially desirable for medium or large families, requiring larger cooking top than on usual cabinet range. Six-burner top is 32x20½ ins.; oven, 18x18x14 ins.; broiler, 18x18x9 ins. Warming closet, drawer and canopy top. Floor space, 54 ins. wide x 26 ins. deep. Height over all, 59½ ins.



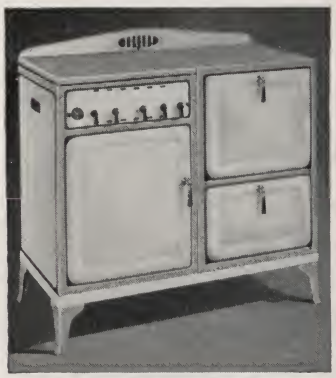
De Luxe Residence Range No. 1001-2 T

Provides unusually large capacity—with six-burner cooking top, 34½x22 ins.; two heat controlled ovens, 22x18x13½ ins. and 14x18x14 ins.; broiler, 16x18x14 ins. Warming closet and canopy top. Floor space, 56 ins. wide x 26 ins. deep. Insulated ovens and broiler optional. Three finishes



Large Capacity in Limited Space No. E8-1818 EB

For conditions where open top range of large capacity is required, yet only limited space is available. In space 50 ins. wide x 26½ ins. deep there is an 8-burner cooking top, two 18x18x14-in. ovens, one with broiling burner. Warming closet optional. Height over all, 64 ins.



The New Table Top Range No. A-1616-3 TCI

The newest style for smart kitchens. Furnished in Polytone green and ivory enamel exterior with enameled burner box, top burners, grates and oven linings. Large cupboard for pots and utensils, 17x19x20. Insulated oven, 16x18x14, and slide out broiler 16x18x10¼. Cooking top has four burners which light automatically when turned on. Floor space 40x24½ ins.



Deluxe Console Gas Range No. A-216-2 TCI

Attractively furnished in Polytone green and ivory enamel. Has large storage cabinet for utensils 17x19x16½. Large drawer for forks, spoons, etc. The burner box, burners, top grates and burner tray are all enameled. Drawer type broiler. Cooking top is 20x19½ ins. Oven 16x18x14. Broiler 16x18x10. Enamel linings. Also supplied without insulation. Floor space 43x24½



Low Priced Console Range No. A-316-2 TCI

The latest style in gas ranges at a surprisingly low price. Cooking top 20x19½ ins. Oven 16x18x16. Broiler 16x18x10. Utility drawer, utensil drawer. Floor space with 3-in. end shelf 42¾ wide x 24½ ins. deep. Oven heat control and insulation optional. Finished in green and ivory or all ivory enamel. Enamel oven linings



Modified Console for Small Space No. 1416-2 TCI

A compact range having full size cooking top 20x19½. Oven 16x18x14 and broiler 16x18x10. Finished outside in Polytone, green and ivory enamel with enamel oven and broiler linings inside. Burners, top grates, burner box and burner tray are also enamel. Oven is insulated with rock wool also supplied non-insulated and without heat control. Floor space 40x24½

VULCAN HEAVY DUTY ALL-HOT-TOP RANGES, BAKE OVENS AND OTHER APPLIANCES

The new Vulcan line marks a distinct advance in commercial cooking equipment. Faster service, greater capacity, lowered fuel costs and better results are assured by numerous improvements. More comfortable working conditions result from thickly insulated ovens. Smooth front improves appearance and makes cleaning easy. Heavy construction throughout assures longer life and minimum maintenance costs.

Only a few Vulcan gas cooking appliances are shown here. There are complete lines of restaurant, junior restaurant ranges, bakers and confectioners stoves, griddles and short-order equipment and industrial burners. Ask for catalogue.

Vulcan equipment is extensively used by hotels, restaurants, hospitals, clubs, schools, industrial cafeterias.



Vulcan No. 4751 All-Hot-Top Gas Range

The leader of the Vulcan line. Closed top is heated by one four ring burner. Large oven. Insulated oven and heat control optional. Broiler at top if desired. Floor space, 31¼ ins. wide, 40¾ ins. deep. Height over all, 68½ ins. Gas manifold, 1¼ ins., flue 6 ins.



No. 4748 All-Hot-Top Range with High Shelf

Equipped with two 3 ring burners and is 40 ins. wide, otherwise like 4751



No. 4745 Open Top Range with High Shelf

Equipped with 4 top burners. Dimensions same as 4751. Also supplied with 6 burners



No. 4760 Fry Top Range with High Shelf

Heavy cast iron top for frying or grilling. Same as 4751



No. 4705 Combination

Vulcan Junior Heavy Duty Ranges

The Junior line of ranges are exact counterparts of the Heavy Duty Line and are made 26½ ins. wide, and 39½ ins. wide. They are supplied in All-Hot-Top, Open Top, Fry Top or a combination of All-Hot-Top and Open Top models. Any combination can be made by attaching different models together. The No. 4705 is a combination of one No. 4700 and one No. 4836 with No. 4718 warming closet between. This combination is 71½ ins. wide x 34¼ ins. deep. Supplied with or without insulation and heat control

Vulcan Junior Restaurant Ranges

These are made in four sizes as follows: No. 3904, four top burners and cake griddle; No. 3906, six top burners without cake griddle; No. 3908, eight top burners with cake griddle; and No. 3910, ten top burners without cake griddle.

They are supplied supplied with insulated ovens and can be furnished with or without oven heat control. Each unit is complete as illustrated by No. 3904

Salamander Broilers

Nos. 3906 and 3910 can be equipped with Salamander in place of shelf if desired. Order as follows: No. 3909 Salamander for No. 3906; No. 3911 Salamander for No. 3910



No. 3904-T Junior Restaurant Range



No. 3758-1 Radiant Surface Broiler

Vulcan Combination Broilers

Sturdily constructed and built to give years of satisfactory service. The No. 3758-1 is our new Radiant Surface Broiler which is the last word in gas cooking equipment. The No. 4756 newly designed and greatly improved in every respect is one of the finest broilers of its type—fast, easily operated and sturdily constructed. Also made in 26½-in. size to connect with Junior Heavy Duty Line. When so desired order No. 4759



No. 4756 Broiler



No. 3761 Bake Oven

Vulcan Insulated Gas Bake Ovens

For bread, pies, cakes and pastry. Made in two sizes with 18½ and 34¼ sq. ft. for baking area. Automatic heat control assures even distribution of heat on all decks. Heavily insulated walls reduce radiation to a minimum. Floor space No. 3761 42 ins. wide x 28½ ins. deep x 63 ins. high. No. 3762 51 ins. wide x 38½ ins. deep x 63 ins. high



Vulcan Deep Fat Fryer

Made in two sizes with 14 and 18-in. kettle

Specification Sheets

Architects will find these specification sheets extremely useful. These can be furnished for all Vulcan appliances. One side of the sheet has an illustration of the appliance and the specifications are given; on the other side are complete dimension diagrams. Architects are invited to write us for a complete set of these specification sheets.

Cooking Planning Service

Experts with many years' experience in planning the cooking equipment for thousands of kitchens will be glad to assist you in selecting the types and sizes of equipment best suited to the job in hand.

Use this service when a client is considering equipping a new kitchen or renovating one now in use.

WESTINGHOUSE ELECTRIC & MFG. CO.

EAST PITTSBURGH, PA.

For Branch Offices, see our Lighting Catalogue
For References to Other Products, see Index to Manufacturers

COMMERCIAL COOKING

Hotel Type Electric Broilers

Built to withstand constant hard service, and incorporates features that insure convenience of operation and low operating cost. Broiler is made in two sizes, each supplied complete with insulated au gratin oven permanently placed above broiling area. Heat from broiler, which would otherwise be wasted, is used in heating this oven.



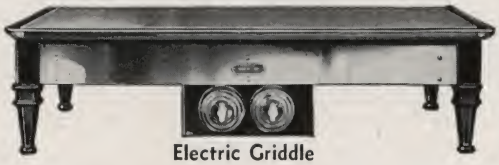
Large Broiler with Roasting Oven

The broiling grid, which is counterbalanced, is manipulated by a convenient handle and can be adjusted by the operator's arm, thus leaving the hands free to place the food to be broiled directly on the broiling grid.

The large broiler is supplied with or without a roasting oven identical to that in the hotel range which gives the user increased roasting facilities with no increase in floor space.

Electric Griddles

The 20-in. griddle has one heater, the 38-in. has two heaters, each covering one-half of the top area. Heaters are controlled by a three-heat, reciprocating snap switch giving full, one-half and one-quarter heat.



Electric Griddle

Commercial Type Electric Ranges

The 3-ft. and 4-ft. section commercial type ranges are built to withstand the heavy service found in hotel, restaurant, cafeteria and institution kitchen operation. Framework of ranges is heavy structural steel. Cooking surface consists of cooking plates surrounded by a belt of brushed steel trim. Heating elements are embedded in heavy cast iron plates in such a way that they are completely protected, insuring high efficiency and long life. The 4-ft. section has 4 plates, 3-ft. section 2 plates, each being controlled by separate 3-heat snap switch.

Ovens, supported by the framework, consist of an inner and outer shell of rust-resisting steel. Oven of the 4-ft. section is lined with stainless steel and the 3-ft. section is vitreous enamel lined; both are heavily insulated with rock wool. Oven can be supplied with automatic or non-automatic oven heat control. All switches and fuses, kept cool by air circulation, are mounted directly on ranges.

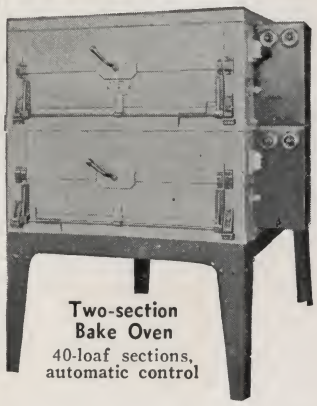
The Westinghouse Range will do more work than a fuel range of same size.



Hotel Type Range

Sectional Electric Bake Ovens

The ovens are the hearth type built in sections, each having independent heat control; thus products requiring different baking temperatures may be baked in adjacent sections at the same time. All ovens are supplied with either automatic or non-automatic temperature control. In non-automatic controlled oven, the temperature is regulated by three-heat reciprocating switches. In automatic oven, temperature is maintained automatically at any desired point by thermostat and mercury switch.



Two-section Bake Oven
40-loaf sections, automatic control

Sectional Electric Roasting Ovens

Made in capacities to meet all requirements from the small restaurant to the largest hotels or cafeterias.

These ovens will pay for themselves in a short length of time due to reduced shrinkage of meats. Improved flavor and reduced spoilage are other important features.

Three sizes (60, 125 and 250 lbs. capacity per section) of roasting ovens are available, each of one or two-section capacity. These are complete ovens.

Electric Fry Kettles

The automatic electric fry kettle gives accurate heat control and uniform heat distribution. Fish, onions, doughnuts, etc. can be fried in the same fat without tasting of each other because there is no carbonizing of food particles and no breaking down of the fat through overheating.

The kettle comes in 60 and 90-lb. fat capacities and 4.5, 7.5 and 11.25 kw. It is attractively finished in battleship gray paint, with polished steel trim.

Electric Coffee Urns

A combination hot water and coffee urn of two separate compartments. The urn is simple in operation and foolproof in construction. Coffee cannot be made in the urn until water boils and this boiling water is quickly sprayed over the grounds and automatically repoured with cover closed, thus retaining all the delicate aroma and flavor.

Urn body is made of very heavy copper, nickel-plated and polished. The coffee container is of heat-resisting glass in the smaller sizes; rustproof metal in the 8 and 10-gal. sizes. An air space between coffee container and inner shell keeps coffee at proper temperature, preventing cooling or boiling. The urn is provided with efficient and durable immersion heaters controlled by a three-heat rotary switch. It has a special combination safety and water relief valve to prevent any possible collapse or bursting from pressure through careless handling.



Coffee Urn

ELECTRIC RANGES



Dual-Automatic Flavor Zone Range

Dual-Automatic Flavor Zone Range

The Dual-Automatic Flavor Zone Range is an addition to the full line of Flavor Zone Ranges.

This is the only range on the market that cooks automatically the "cook book way." This range need not be touched after the meat has been placed in the oven and the regulator set. Automatically the range turns on at the proper time—even if it be hours later and there is no one in the house. It cooks at the high temperature selected for the allotted time and then automatically cuts down the heat to the lower cooking temperature. This method of cooking reduces shrinkage to the lowest point ever reached. It not only retains the delicious juices, flavor and nutriment, but it also makes the meat tender by low heat, moist cooking.

With this range it is possible to cook by either of the three methods of cooking:

A. The Fully Automatic Flavor Zone Method.
B. The Maintained Temperature Method.
C. A combination of these methods that is fully automatic.

Time Control for Dual-Automatic Flavor Zone Range—This is a self-starting electric clock, of very pleasing and attractive design, mounted in a black micarta case that blends perfectly with the design and color of the range.



Time Control

It is equipped with an "on" hand to start cooking operations and an "off" hand to stop cooking operations. When the housewife does not wish to use the automatic controls, she can throw the control knob on the back of the clock to the "off" position. Attached to this knob is a metal flag on which the word "automatic" is written. When the control knob on the back of the clock is in the "on" position, the flag is displayed at the side of the clock and indicates that it is ready to operate the range automatically. When the control knob is in the "off" position, the flag is drawn in back of the clock, indicating that the clock will not operate automatically.

Corox Quick-Cook Unit—Made of stainless steel, giving maximum strength with minimum weight. Pure magnesium wound spirally around the resistance coils is placed in the groove of the pressed steel halves. Corox patented process assures perfect centering of coil and even coil distribution eliminating hot spots, so that it is the fastest enclosed unit on the market.



Quick-Cook Unit
(Enclosed Type)

Corox Quick-Cook Unit is easy to keep clean, rustproof, stainless steel top and bottom plates, neat in appearance, light weight, even heat distribution, and rigid plate construction to prevent warping.

Description—For the larger family.

Dimensions in Inches—Over-all, 41½ wide, 44¾ high, 25½ deep. Oven, 16 wide, 14 high, 18½ deep. Cooking platform, 41 wide, 24 deep, 34¾ from floor. Wiring outlet, from floor 19 1/16 from right end 2½.

Finish—Ivory enamel with acid-resisting top.

Units—Surface, 6 in., 1200 watts (enclosed); 6 in., 1200 watts (enclosed); 8 in., 1500 watts (open); 8 in., 2000 watts (open). Oven: top, 1500 watts, bottom, 1500 watts. Two appliance receptacles 660 watts each (one is automatic time controlled).

Operation—Dual-automatic.

Shipping Weight—295 lbs. approximately.

Other Flavor Zone Ranges

The other Flavor Zone Ranges operate on the old Dutch Oven principle. They also make it possible to duplicate the best results of any other cooking method without any one being in the kitchen during the browning and roasting process. A lining of enameled sheet steel is placed inside the outer oven walls and a high grade heat insulator (mineral wool) packed between lining and walls. The same procedure is followed in the oven door, so that, when closed, heat is retained in the oven long after the current has been turned off. The use of this principle has many advantages: economy of current consumption from the use of stored heat; food left in the oven longer than necessary is never overdone or burned, but kept hot and palatable; complicated method of control not necessary to maintain a cooking temperature in the oven.



Quick-Cook Unit
(Open Type)

In addition Westinghouse ranges are now equipped with quick-cook units—the application of this exclusive development making it possible to do cooking 30% to 50% faster and 10% to 20% more efficiently. These surface units can be had with either open or enclosed coil.

Oven—Furnished right or left hand.



Clock

Console D-431

Description—Apartment or home kitchen for 4 or 5 people.

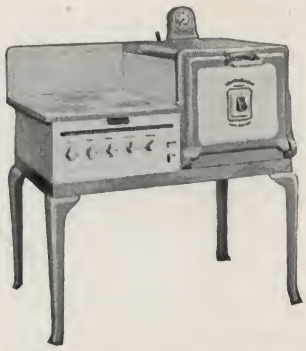
Dimensions in Inches—Over-all, 38¼ wide, 46¾ high, 27½ deep. Oven, 14 wide, 14 high, 17½ deep. Wiring outlet, from floor 24; from platform end 10¾.

Finish—Gray enamel.

Units—Surface, open or enclosed quick-cook; 6 in., 1000 watts; 6 in., 1200 watts; 8 in., 2000 watts. Oven: top, 1500 watts, bottom, 1500 watts. Appliance receptacle, 660 watts.

Operation—Full automatic.

Console D-631



Description—For the larger family.

Dimensions in Inches—Over-all, 40½ wide, 46¾ high, 27½ deep. Oven, 16 wide, 14 high, 17½ deep. Wiring outlet, from floor 24, from platform end 10¾.

Finish—Gray enamel.

Units—Surface, open or enclosed quick-cook; 6 in., 1000 watts; 6 in., 1200 watts; 8 in., 2000 watts. Oven: top, 1500 watts, bottom, 1500 watts. Appliance receptacle, 660 watts.

Operation—Full automatic.

Senior Console D-841

Description—8 or 10 people (small clubs and the like).

Dimensions in Inches—Over-all, 46¾ wide, 48 high, 27½ deep. Oven, 18 wide, 15 high, 17½ deep. Wiring outlet, from floor 24; from platform end 12½.

Finish—Gray enamel.

Units—Surface, open or enclosed quick-cook; 6 in., 1000 watts; 6 in., 1200 watts; 8 in. (hot spot), 1500 watts; 8 in., 2000 watts.

Oven: top, 1800 watts, bottom, 1800 watts. Appliance receptacles, 660 watts.

Operation—Full automatic.

Console C-43

Description—Small kitchen.

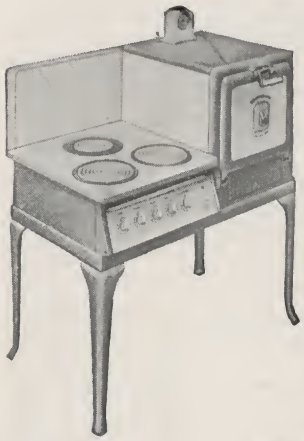
Dimensions in Inches—Over-all, 40½ wide, 49¾ high, 27 deep. Oven, 14 wide, 14 high, 17½ deep. Cooking platform, 23 wide, 24¼ deep, 32 from floor. Wiring outlet, from floor 25, from platform end 10¾.

Finish—Gray enamel—chromium trim.

Units—Surface, open or enclosed quick-cook, 6 in., 1200 watts, 8 in. (hot spot), 1500 watts; 8 in., 2250 watts. Oven: top, 1500 watts, bottom, 1500 watts. Appliance receptacle, 660 watts.

Operation—Full automatic.

Console C-63



Description—Larger family.

Dimensions in Inches—Over-all, 43 wide, 51¼ high, 27 deep. Oven, 16 wide, 14 high, 17½ deep. Cooking platform, 23 wide, 24¼ deep, 32 from floor. Wiring outlet from floor 25, from platform end 10¾.

Finish—Gray enamel—chromium trim.

Units—Surface, open or enclosed quick-cook; 6 in., 1200 watts; 8 in. (hot spot), 1500 watts; 8 in., 2250 watts. Oven: top, 1500 watts, bottom, 1500 watts. Appliance receptacle, 660 watts.

Operation—Full automatic.

Console C-431

Description—Apartment or home for the family of four or five.

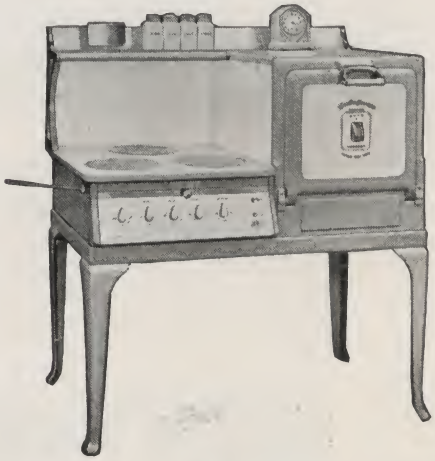
Dimensions in Inches—Over-all, 40 wide, 49½ high, 27 deep. Oven, 14 wide, 14 high, 17½ deep. Cooking platform, 23 wide, 24¼ deep, 32 from floor. Wiring outlet, from floor 25, from platform end 10¾.

Finish—Gray enamel.

Units—Surface, open or enclosed quick-cook; 6 in., 1200 watts; 8 in. (hot spot), 1500 watts; 8 in., 2250 watts. Appliance receptacle, 660 watts.

Operation—Full automatic.

Console C-631



Description—For the larger family.

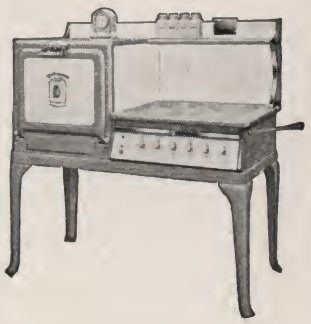
Dimensions in Inches—Over-all, 42½ wide, 51¼ high, 27 deep. Oven, 16 wide, 14 high, 17½ deep. Cooking platform, 23 wide, 24½ deep, 32 from floor. Wiring outlet, from floor 25; from platform end 12⅛.

Finish—Gray or green enamel.

Units—Surface, open or enclosed quick-cook; 6 in., 1200 watts; 8 in. (hot spot), 1500 watts; 8 in., 2250 watts. Oven: top 1500 watts, bottom, 1500 watts. Appliance receptacle, 660 watts.

Operation—Full automatic.

Console C-841



Description—For family of 8 or 10.

Dimensions in Inches—Over-all, 48 wide, 51¼ high, 27 deep. Oven, 18 wide, 15 high, 17½ deep. Cooking platform, 26 wide, 24¼ deep, 32 from floor. Wiring outlet, from floor 25; from platform end 13⅝.

Finish—Gray or green enamel.

Units—Surface, open or enclosed quick-cook; 6 in., 1200 watts; 8 in., 1000 watts; 8 in. (hot spot), 1500 watts; 8 in., 2250 watts. Oven: top, 1800 watts, bottom, 1800 watts. Appliance receptacle, 660 watts.

Operation—Full automatic.



Low Oven Range

Description—Small kitchenette.

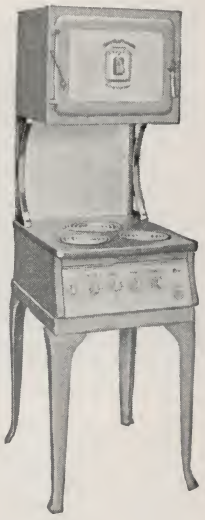
Dimensions in Inches—Over-all, 20½ wide, 38½ high, 21 deep. Oven, 16½ wide, 12 high, 13½ deep. Cooking platform, 19¾ wide, 17½ deep, 35 from floor. Wiring outlet, from floor 28$\frac{11}{16}$; from right end 5⅞.

Finish—Gray enamel and black japan.

Units—Surface, open or enclosed quick-cook; 6 in., 1200 watts; 8 in., 2250 watts. Oven: top, 1500 watts, bottom, 1500 watts. Appliance receptacle, 660 watts.

Operation—Automatic or non-automatic. Automatic oven controlled by thermometer.

High Oven Range



Description—Small apartment kitchen.

Dimensions in Inches—Over-all, 20½ wide, 62¼ high, 24¼ deep. Oven, 16½ wide, 12 high, 13½ deep. Cooking platform, 19¾ wide, 23 deep, 32 from floor. Wiring outlet, from floor 25; from center 9⅞.

Finish—Gray enamel or black japan.

Units—Surface, open or enclosed quick-cook; two 6 in., 1000 watts; one 8 in. (hot spot), 1500 watts. Oven: top, 1500 watts, bottom, 1500 watts. Appliance receptacle, 660 watts.

Operation—Automatic or non-automatic. Automatic oven controlled by thermometer.

Royale CR-842 with Lowboy

Description—More than 6 people (small clubs).



Dimensions in Inches—Over-all, 48½ wide, 54½ high, 27 deep. Oven, 18 wide, 15 high, 17½ deep. Cooking platform, 26 wide, 24¼ deep. Warming compartment 16 wide, 20 deep, 12 high. Wiring outlet, from floor 25; from platform end 13⅝.

Finish—Gray enamel and chromium plate.

Units—Surface, open or enclosed quick-cook; 6 in., 1200 watts; 8 in., 1000 watts; 8 in. (hot spot), 1500 watts. Oven: top, 1800 watts, bottom, 1800 watts; warming compartment, 300 watts. Appliance receptacle, 660 watts.

Operation—Full automatic.

ELGIN STOVE & OVEN COMPANY

ELGIN, ILL.

REPRESENTATIVES IN ALL PRINCIPAL CITIES

STEEL KITCHEN CABINETS

Elgin offers architects and builders steel kitchen cabinets in a sectional system so designed that any kitchen cabinet requirement can be satisfactorily and economically fulfilled.

SPECIFICATIONS

Material

All stock shall be best grade selected cold rolled, full pickled, stretcher level No. 1 furniture steel, free from pits, buckles, or rust.

Construction

Cabinets shall be new approved flush type. All joints shall be electric spot welded by Elgin special process, eliminating the weld marks. Cabinet fronts shall be rabbeted to receive ⅞ in. thick doors and drawer fronts. Doors and drawer fronts shall have a liner welded to exposed front enclosing a layer of sound-absorbing insulation. All openings shall be equipped with rubber bumpers (button-type) installed on face of rabbeting. Doors shall be equipped with glass where indicated.

All drawers shall be equipped with telescopic channel design slides and automatic stops. Drawer stops shall be designed to permit easy removal of drawer for cleaning.

Hardware

All hinges shall be bullet semi-concealed type, die cut from high-grade strip steel, rust-proof, triple-plated, hand-polished, bright chromium finish.

Door and drawer knobs shall be cast brass, chromium plated, and hand-polished to a mirror finish.

Finish

All surfaces shall be chemically cleansed and coated with high-heat baking primer. Finish shall be high-grade synthetic enamel baked on at 250° F. for two hours.

Colors

Note: Various standard color combinations including green, white, ivory, tan, and gray can be furnished. Samples sent on request.

TYPICAL EFFICIENCY COMBINATIONS FOR APARTMENTS



The Marquette 4 Ft. 6 In. Efficiency Kitchen

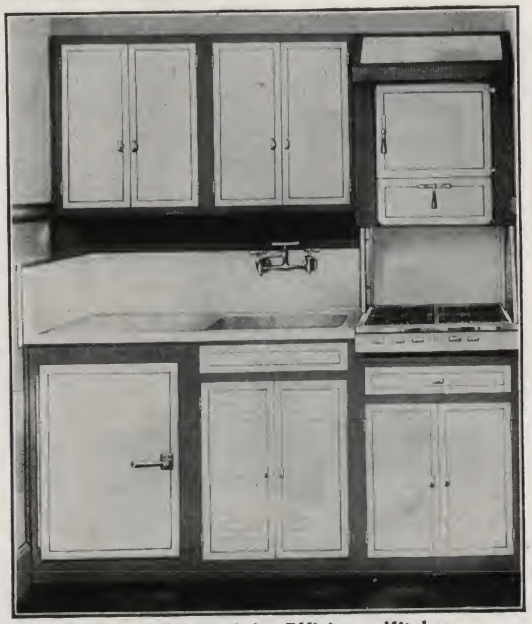


Marquette Tower Building, Milwaukee, Wis.

Above:
Marquette Tower Building, Milwaukee, Wis., in which 190 4 ft. 6 in. efficiency combinations are giving service

Left:
An efficient combination for one-room apartment. Includes Elgin steel cabinets, range, sink, and refrigerator

Right:
A modern, practical combination for two-, three-, or four-room apartments. Ample storage space, large sink, 5-cu. ft. refrigerator, full 16-in. oven range with broiler



The Astor 6 Ft. 0 In. Efficiency Kitchen



Before

Remodeling

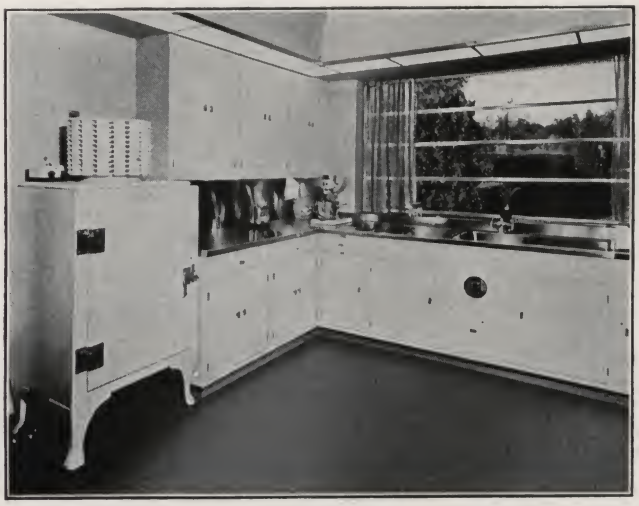
The flexibility of Elgin design readily lends itself to modernizing projects. 1933 finds many architects with large or small remodeling commissions. The Elgin sales and technical staff, as well as our many representatives throughout the country, are thoroughly experienced in the design, layout, and installation of steel kitchen cabinets. Architects and builders are invited to use this experience and counsel in this important phase of building construction. The actual photographs shown here are an excellent example of the tremendous improvement that can be brought about at comparatively little expense.



After

TYPICAL EFFICIENCY COMBINATIONS FOR RESIDENCES

Residence kitchens, large or small, can be conveniently arranged with Elgin steel units. Many leading architects recognize the superior qualities of Elgin steel units, offering as they do the maximum in utility, sanitation, permanence, and beauty, and specify them for their clients, thus assuring a lifetime of satisfactory cabinet service.





An All-Electric Kitchen

The two illustrations above show the adaptability of Elgin steel cabinets used with several electric appliances in an all-electric kitchen. One of the larger manufacturers of electric refrigerators and other kitchen appliances selected Elgin steel cabinets for use in the model display kitchen in their Kitchen Institute offices.



The Exeter

Unlimited Arrangements for Various Types of Residences

These illustrations show desirable arrangements for treatment of kitchens in different types of residences. The possibility of distinctive and unique combinations is unlimited. In 1932 the Buhl Foundation in Pittsburgh erected 125 homes. Elgin steel kitchen cabinets were used exclusively.



The Kenilworth

Sinks

Furnished in Monel metal or stainless steel. Also furnished, porcelain enameled, one-piece sink tops and backs with integral bowls.

Counter Tops

Monel metal, stainless steel, linoleum with Monel metal bindings, and porcelain-enameled or laminated maple.

Wall Cabinets and Accessories

Wall cabinets as standard are 13 ins. deep and 18, 30, and 36 ins. high. Base cabinets are 21 ins. deep and 35 ins. high. Wall and base cabinets are available in various convenient widths from 13¼ to 48 ins. Broom and dish cabinets are 13¼, 18, and 24 ins. wide, and 13 or 21 ins. deep. Standard heights of assemblies are 7 ft. 0 ins. and 7 ft. 6 ins. high.

Accessories, such as flour bin, concealed bread drawer, cutting board, and cutlery drawers, can be furnished when specified.

Ranges

Efficiently designed ranges to meet the exacting requirements of apartment use are manufactured in our own factory, thereby assuring a neat and perfectly fitted combination, the component parts of which have the appearance of a unit rather than the assembly of a number of items obtained from different sources of supply.

Dimensional drawings of Elgin standard sections, ranges, and refrigerators available on request.

EXCEL METAL CABINET CO., INC.

JAMESTOWN, N. Y.

SALES OFFICE: 101 Park Avenue, NEW YORK, N. Y.

REPRESENTATIVES

CLEVELAND, OHIO
DALLAS, TEX.
DETROIT, MICH.
LOUISVILLE, KY.
PALM BEACH, FLA.
PHILADELPHIA, PA.
ST. LOUIS, MO.
SYRACUSE, N. Y.

Products

STEEL CABINETS, CUPBOARDS, DRESSERS, BROOM CLOSETS, LINEN CLOSETS for kitchens and pantries of residences, apartments and institutions.

Also Cabinet Electric Platewarmers; Monel Metal Sinks, Tables and Equipment; Hospital Cabinets and Built-in Equipment.

Advantages

Steel dressers are the utmost in kitchen and pantry equipment for the modern residence. They are sanitary, durable, moistureproof, verminproof, and fireproof.

Data

Complete construction details, types, sizes and specifications will be sent on request.

Service

We are prepared to submit a complete layout from your floor plans and offer suggestions for efficient arrangement.



Pantry S. A. Kirkman Residence, 43 East 68th Street, New York, N. Y.



Pantry in Apartment, 740 Park Avenue, New York, N. Y.



Kitchen, E. M. Statler Residence





Kitchen and Pantry, J. W. Kiser Residence



Pantry, Geo. D. Widener Residence

Among Our Installations Are the Following

Residences

OWNER	ARCHITECT
E. M. Statler	Geo. B. Post & Son, Inc.
Samuel L. Fuller	Peabody, Wilson & Brown
John W. Kiser	Hiss & Weekes
Jacob L. Reiss	Ernest A. Arend
Norma T. Johnson	Goodwillie & Moran
George D. Widener	Horace Trumbauer
S. A. Kirkman	Ernest Flagg
L. K. Jennings	W. B. Chambers
Edw. H. Wells	Lyon & Taylor
Frederick Rockwell	Taylor & Levi
W. D. McClintock	Clarence E. Day

Apartments

720, 740, 780 Park Avenue	Rosario Candela
895 Park Avenue	Sloan & Robertson
76th Street and Madison Avenue	Bien & Prince
15 West 81st Street	Emery Roth
El Dorado Towers	Margon & Holder

THE INTERNATIONAL NICKEL COMPANY, INC.

Monel Metal and Nickel and Allied Products

EXECUTIVE OFFICES
67 Wall Street
NEW YORK, N. Y.

For Our Other Products, see Manufacturers' Index

For Sources of Supply, see our page on Metals

MONEL METAL "STRAITLINE"* CABINET SINKS AND CABINET TOPS

See also our catalogue on "Streamline and Straitline" Kitchen and Pantry Sinks in this edition of SWEET'S

Products

INCO "STRAITLINE" MONEL METAL CABINET SINK.

INCO "STRAITLINE" MONEL METAL CABINET TOP.

INCO SEAMLESS MONEL METAL FLAT RIM BOWL.

Available from stock through the plumbing supply industry, kitchen cabinet manufacturers and their dealers.

TRADE-MARK

Properties of Monel Metal

Made of two-thirds nickel and one-third copper—silvery color—easily cleaned—absolutely rust-proof—solid metal—no coating to chip, crack or wear off—resists corrosion—strong and durable—tough as steel.

Appearances and Finish

Monel Metal has the appearance of fine old silver. The satin finish used on INCO Monel Metal sinks was created as the ideal finish for work surfaces, being neither too bright nor too dull, reflective but not mirror-like. Its silvery beauty improves with use and ordinary cleaning with the abrasive cleaners usually found in the home.

Special Features

31% Increased Work Surface—The narrow rim around the drainboards compared with the 2⅞-in. rim in ordinary sinks increases the actual drainboard working surface by as much as 31%. Examples: A 60-in. Monel Metal sink has more working surface than a 74-in. enamelled iron sink; a 41-in. Monel Metal sink has more working surface than a 52-in. enamelled iron sink.

Sound Deadened—Drainboards and bowl are sound deadened, reducing dish clatter to a minimum.

Less Dish Breakage—Drainboards and bowl are resilient enough to soften impacts of dishes which reduces dish breakage to a minimum.

Solid Metal—Solid metal clear through—no coating to chip, crack or wear off.

Architects' Specifications

Cabinet Sink—The cabinet sink shown on plan shall be an INCO "Straitline" Monel Metal cabinet sink, Model....., size..... The thickness of the Monel Metal in the bowl shall be 19 gauge (.043 in.) and the thickness of the drainboard and back splash shall be 20 gauge (.037 in.). The one-piece drawn sink bowl, size....., shall be welded to adjacent drainboards with solder on inside flange. The back splash shall be bolted to sink and reinforced by supporting members. Drainboards are to be backed up with 14 gauge (.078 in.) steel plate. Entire underbody to be sound-deadened, and thoroughly coated with a special compound to seal and sound-proof all surfaces; bowl also to be sound-deadened. Sink bowl shall be fitted with a flat rim strainer with solid Monel Metal top and screw. (*Alternate:* Fitted with a 20% Nickel Silver combination crumb-cup, strainer and stopper.) Sink shall have a satin finish.

Fittings—The sink shall be fitted with solid 20% Nickel Silver compression double sink faucet with swing spout projecting over drain in bowl. (*Alternate:* The sink shall be fitted with satin finish, chromium-plated compression double sink faucet with swing spout.)

Cabinet Tops—The cabinet top shown on plan shall be an INCO "Straitline" Monel Metal cabinet top, Model ....., size..... The thickness of the metal shall be 20 gauge U.S.S. (.087 in.) backed with 14 gauge U.S.S. (.078 in.) steel. The entire underbody to be sound deadened and thoroughly coated with a special compound to seal and sound-proof all surfaces. When optional back splasher is used, it shall be bolted to the integral back splash and reinforced by supporting Z bar. Integral backsplash shall be 1½ in. and rim on ends and front to be ¾ in. Top shall have a satin finish.

Seamless Flat Rim Bowl—Flat rim bowl shown on plan shall be an INCO seamless Monel Metal flat rim bowl, Model....., size..... The thickness of the Monel Metal shall be 19 gauge U.S.S. (.043 in.). Flanges shall have square corners and be 1½ in. wide. The inside depth of the bowl shall be 6½ in. The underside of bowl shall be sound deadened. Drain hole shall be drilled in center of bowl to take the INCO 20% Nickel Silver combination crumb-cup, strainer and stopper or INCO Monel Metal Flat Rim Strainer. Inside of bowl shall have a satin finish.

*Reg. Trade-Mark.

INCO "STRAITLINE" MONEL METAL CABINET SINKS

Inco Double Drainboard Monel Standardized Models



Inco "Straitline" Double Drainboard Monel Metal Sink with Optional Back Splasher

DOUBLE DRAINBOARD SIZES

Model No.	Dimensions, ins.							
	Size	Actual over-all Width	Actual over-all Length	Length of sink bowl	Length of drainboards	*Total height of back	Height of apron	Depth of bowl
INCO C2060	25x 60	25	60	20	20	8	1½	7
INCO C2072	25x 72	25	72	20	26	8	1½	7
INCO C2581	25x 81	25	81	25	28	8	1½	7
INCO C2584	25x 84	25	84	25	29½	8	1½	7
INCO C2587	25x 87	25	87	25	31	8	1½	7
INCO C2593	25x 93	25	93	25	34	8	1½	7
INCO C2599	25x 99	25	99	25	37	8	1½	7
INCO C25105.....	25x105	25	105	25	40	8	1½	7
INCO C25111.....	25x111	25	111	25	43	8	1½	7
INCO C25117.....	25x117	25	117	25	46	8	1½	7

*When back splasher is not included, the height of back splash is 1½ ins.

Inco "Straitline" Single Drainboard Monel Metal Cabinet Sinks



Inco "Straitline" Single Drainboard Monel Metal Sink with Integral Back Splash of 1½ In.

SINGLE DRAINBOARD SIZES

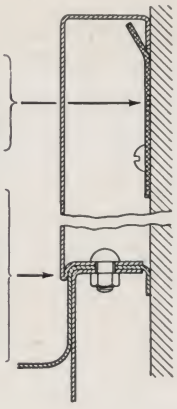
Model No.	Apron, 1½ ins. Actual over-all, ins. Width	Apron, 1½ ins. Actual over-all, ins. Length	Bowl, 7 ins. Length of bowl, ins.	Total height of back, 8 ins. Length of drainboard, ins.
INCO C2048L	25	48	20	26¼
INCO C2048R	25	48	20	26¼

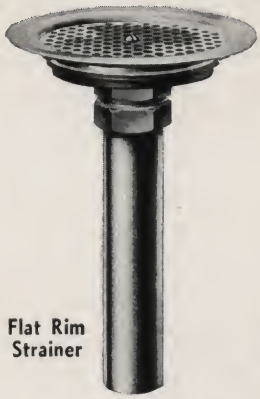
Detail of Back Splasher Wall Bracket

Lip of wall bracket wedges edge of back splasher tightly against wall when back splasher is placed in position

Detail of Back Splasher Overlapping Joint

Back splasher overlaps the integral back splash by ¼ in. This overlap combined with the bolted angles of the back splasher and integral back splash makes a tight, sanitary and inconspicuous joint





Flat Rim Strainer







Optional 20% Nickel Silver Combination Strainer

A flat rim strainer (shown at the left) with solid Monel Metal top and screw is furnished with all "Straitline" Cabinet Sinks. (20% Nickel Silver combination crumb-cup, strainer and stopper can be substituted at slight additional cost)

INCO MONEL METAL CABINET TOPS



Left:
Monel Metal Cabinet Top with 1½-in. Integral Back Splash



Right:
Monel Metal Cabinet Top Complete with Optional Back Splasher

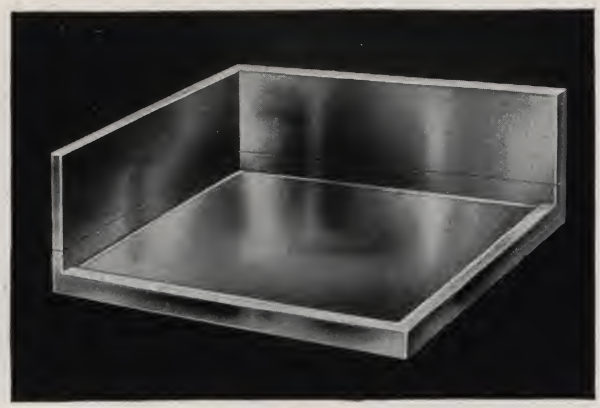
INCO MONEL METAL CABINET TOPS—MODEL NUMBERS AND DIMENSIONS

Model No.	Actual size, ins.		*Total height of back, ins.	Height of apron, ins.
	Width	Length		
Inco CT15	25	15	8	1½
Inco CT18	25	18	8	1½
Inco CT21	25	21	8	1½
Inco CT24	25	24	8	1½
Inco CT25L	25	25	8	1½
†Inco CT25R	25	25	8	1½
†Inco CT30	25	30	8	1½
Inco CT36	25	36	8	1½
Inco CT42	25	42	8	1½
Inco CT48	25	48	8	1½
Inco CT60	25	60	8	1½
Inco CT72	25	72	8	1½
Inco CT84	25	81	8	1½

*When back splasher is not included, the height of back splash is 1½ ins.
†Includes integral back splash on left or right side as indicated by letters (L) or (R).



25-in. Square Monel Metal Cabinet Top (Inco CT25L) with 1½-in. Integral Splash on Back and Left End Only
Also available on right end



25-in. Square Monel Metal Cabinet Top Complete with Optional Back and End Splasher

MONEL METAL SEAMLESS FLAT RIM SINK BOWLS



Model No.	Gauge	Inside width, ins.	Inside length, ins.	Inside depth, ins.	Flange, ins.
Inco 1820 ...	.043	18	20	6½	1½
Inco 1825 ...	.043	18	25	6½	1½

Established 1840

JANES & KIRTLAND, INC.

Sectional Steel Units

MAIN OFFICE AND SHOWROOM
101 Park Avenue
NEW YORK, N. Y.

FACTORY, ST. CHARLES, ILL.

Wherever food is stored, prepared, or served—use *steel!*

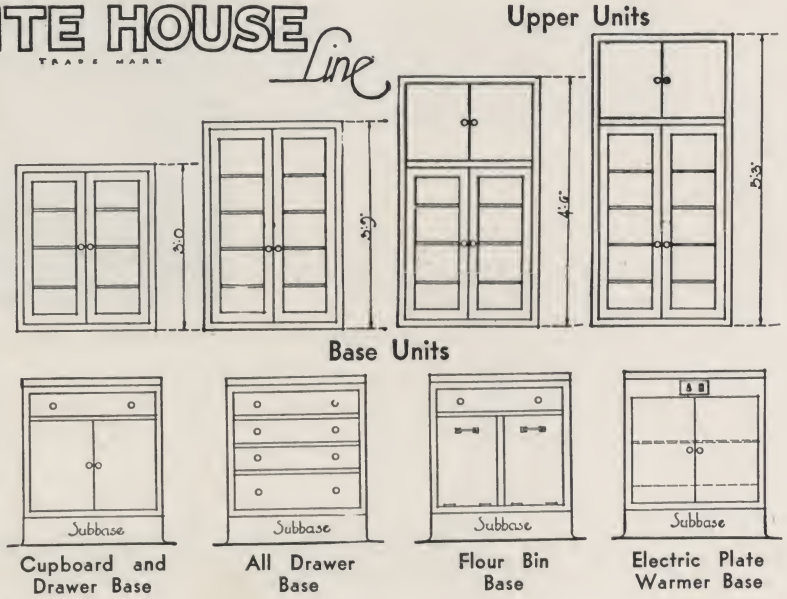
The WHITE HOUSE Line
TRADE MARK

White House sectional steel units are adaptable for practically any space and purpose. Aside from the usual cupboards and drawers, additional utility and convenience is provided with flour and sugar bins, electric plate warmers, electric towel dryers, soiled linen bins, tray and platter storage, etc.

All White House units are furnished complete including hardware, glass where specified, and finished in baked white enamel or color as selected. Color work is done by matching samples submitted to us.

The line comprises upper and lower units, broom closets, tables—and regular kitchen cabinets with equipment.

White House units effect a saving in the cost of installation, especially where the walls are tiled, each unit being a complete steel case makes it unnecessary to tile in back of the units.



Specifications

All cabinets, dressers, closets, etc., shall be sectional steel units as manufactured by JANES & KIRTLAND, INC., 101 Park Avenue, New York, and called the White House Line.

Steel—All units to be constructed of first grade furniture steel, cold rolled, full pickled, blue annealed, stretcher leveled, and consisting of 18, 20 and 22 gauge sheets.

Drawers—All drawer fronts to be of double construction ½ in. thick reinforced on the inside with heavy steel channels, body of drawer to be 20 gauge—front of drawer to be two sheets of 22 gauge in double construction as mentioned above and fitting into full rabbetted frames.

Drawers to be hung on extra heavy anti-friction, interlocking channel suspensions.

Doors—All doors to be of double construction ½ in. thick reinforced on the inside with heavy steel angles with spaces on the inside to take the main portion of semi-concealed brass chromium plated hinges. All hinges to have an adjustment for refitting after installation. All doors to close on spring friction catches to be at top of door, leaving the bottom rabbett clear; and to have rubber bumpers. Knobs to be of brass chromium plated.

Glass doors to be constructed of one piece all steel frame (no wood used) same as steel doors, fitted with double thick glass held in place by felt pads, and polished stainless steel mouldings which are removable for replacing glass.

Frames—All frames shall be full rabbetted on all sides to receive doors and drawers, making a flush surface and acting as dust and vermin guards. All frame members to be full rabbetted and all corners to be interlocking rabbetts for strength. Ends to be extended rabbetts full depth with flange at back to receive main back to unit. Front members to be closed with shelf support strips.

All outside corners to be flush construction, horizontal members mortised, and reinforced to receive vertical members to be welded and ground off smooth at the joint and spot welded at corners, making very rigid corner construction without visible joints.

Shelves—All shelves to be of steel, enameled, flanged down and hemmed on all four sides to eliminate raw edges and to be adjustable on 3-in. centers.

DIMENSIONS (INCHES)

Base Units			Upper Units			
Width	Depth	Height	Doors	Width	Depth	Height
14½	22 ins. standard may be made shallower with exception bin base min. 16 ins. Plate warmer 22 ins. only	28½ ins. for all base units	1	14½	12 or 14 ins. Doors glazed or solid	All upper units made in following heights
16½			1	16½		
18¾			1	18¾		
24			2	24		18
26			2	26		36
27½			2	27½		45
30			2	30		54
36			2	36		63
39			3	39		
50½			4	50½		

Finish—All surfaces of units to be thoroughly cleaned after fabrication, and then given a tough, adhering priming coat and four coats of enamel baked to a sufficient degree to give a smooth, glossy finish.

Counter Construction—Counters to be 1½-in. thick of 18 gauge monel metal or stainless steel sound deadened and reinforced underneath with heavy steel channels to which the counter is bolted to the base units making a rigid construction equal to heavier gauge metals. Counters shall be provided with a 2-in. back, 1 in. thick and ends where necessary. There shall be a 2-in. overhang in front on all counters and flanged under to close opening. Counters are made 1½ ins. high. For kitchen use—monel metal or stainless steel. For pantries—linoleum cemented on a steel counter and finished with metal nosing.

Sub Base—Of tile, concrete, etc., by other contractors.

Upon receipt of your floor plan, our Service Department will prepare a layout with detailed estimate, showing that good taste and design need *not* be sacrificed for efficiency when using White House units.

Catalog No. 6 with photographs of actual layouts and list of installations sent on request.

MURPHY DOOR BED COMPANY

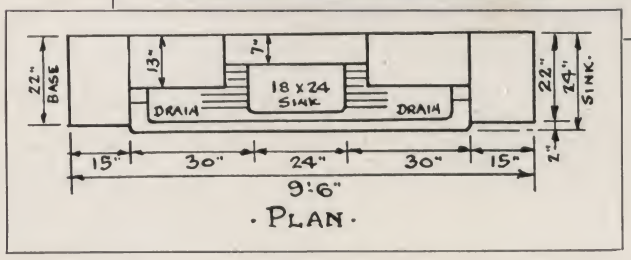
MAIN OFFICE
19 West 44th Street, NEW YORK, N. Y.

OFFICES AND DISPLAY ROOMS THROUGHOUT THE UNITED STATES AND CANADA

For Murphy Disappearing Beds, see Manufacturers' Index

MURPHY BUILT-IN WOOD KITCHEN CABINETS



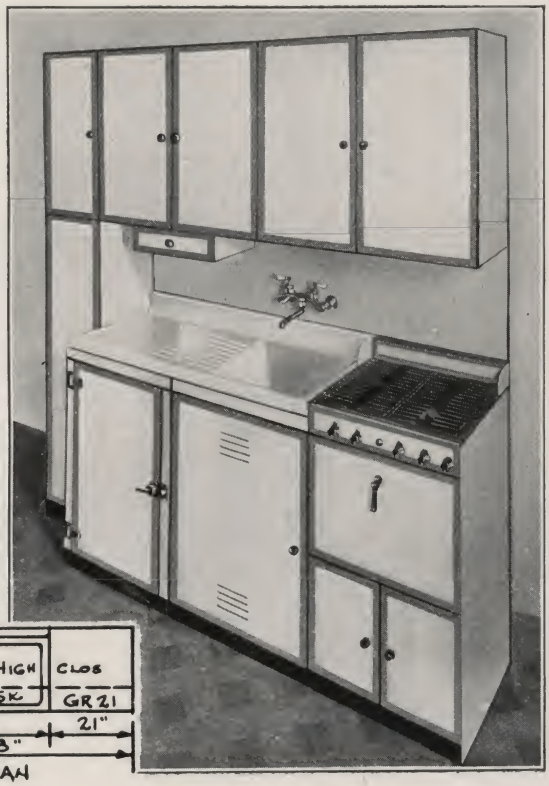


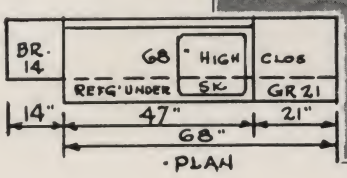
Murphy Built-in Wood Kitchen Cabinets are made in all sizes. An unlimited range of combinations is possible to meet every requirement. The unit illustrated above is used with Murphy Cast Iron Enameled Sink with end drains (7 ft. long, 2 ft. deep), with 4-in. shelf extending the entire length of the fixture.

All sizes and types of Murphy Built-in Wood Kitchen Cabinets can be furnished with door and drawer fronts either ¾-in. thick or 1⅛-in. thick. All doors are equipped with chrome-plated hinges and easily operating catches. Colored glass knobs with patented metal ferrules used on all drawers.

MURPHY STEEL PORCELAINED KITCHENS

Murphy Steel Porcelained Kitchen Units are made in a large variety of sizes which makes it possible to furnish assemblies in all of the desired lengths. Cabinets are fabricated in 18 and 20-gauge steel with front surface finished in vitrified porcelain, balance of cabinets finished in lacquer. Ranges and refrigerators are scientifically insulated and porcelain-lined. Refrigerators are adaptable for use with varied types of mechanical refrigeration. The Murphy Cast Iron Sink and Drain used with the unit shown at the right has an exceptionally large sink which measures 9 in. in depth from roll to the trap outlet.



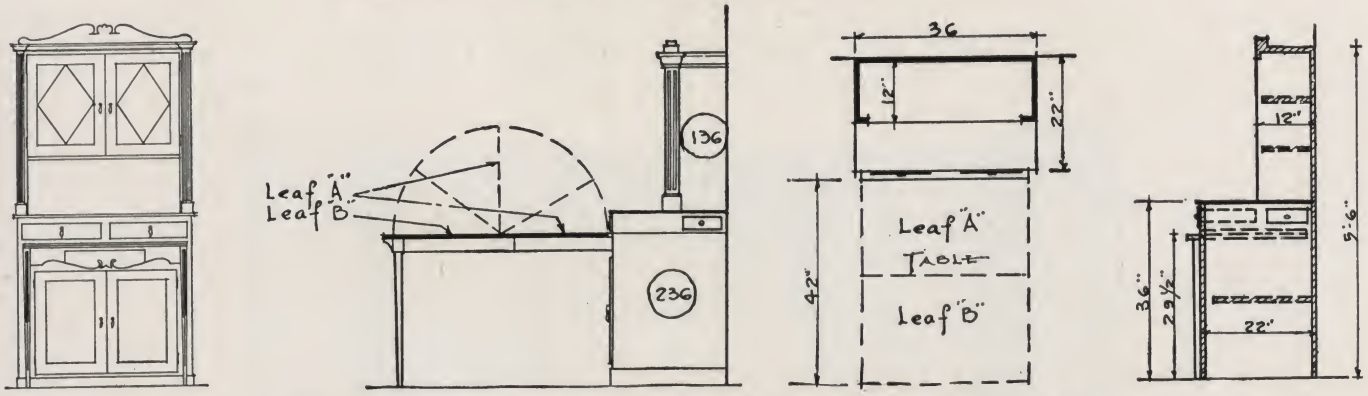


We also handle Parson's Pureaire Kitchens and Chefenettes. Steel and wood ironing board cabinets.

STERLING CABINET SPACE-SAVERS

DIVISION, STERLING CRAFT KITCHENS UNIQUE, INC.
PATENTS AND PATENTS PENDING
553 North La Salle Street, CHICAGO, ILL.

THE NEW MODERN SPACE SAVING DINETTE



STERLING GLYDAWAY CABINET SPACE-SAVER MODEL 236-136

Designed to meet the present day demand for a low-priced quality cabinet that furnishes maximum practical usefulness from small floor and wall space. It is suitable for use in kitchens, by itself, or combined with cabinets by others. It is especially fitted to solve problems in the dinette and living rooms of homes, apartments and straight hotels. There are thousands of old-style dwellings, subject to modernization, where you will find an outstanding need for this unique efficiency cabinet.

Specifications

Entire cabinet of birch. All wood "in the white" so cabinet can be finished to harmonize with surroundings.

Base Section No. 236—Is 36 ins. wide x 22 ins. deep x 36 ins. high. Has two small drawers above table, divided for silverware. Storage compartment has stationary gum wood shelf through center and is closed with two doors.

Above storage compartment is housed the extension table 34 ins. wide. Table can be used in extension lengths of 24 ins. or 42 ins., when fully extended. Ledge of base top exposed, when upper section is in place, is large enough to permit the use of an electric hot-plate. Shelf area of base unit is 11 sq. ft.

Upper Section No. 136—Is 36 ins. wide x 12 ins. deep x 30 ins. high. Two grooved shelves, each 36 ins. wide x 10 ins. deep, enclosed behind panel doors.

Note: We recommend Base Section No. 236 for use under windows in kitchens, breakfast rooms and in living rooms of efficiency apartments, as well as in straight hotel rooms where emergency dining facilities are a renting appeal. It will solve many problems in the nursery and children's study rooms.

DESCRIPTION OF VARIOUS "TI-DI-NETTE" MODELS

Ti-Di-Nette is the only handy space-saver cabinet having foldaway table and seats, used in conjunction with permanent and ample storage space accessible at all times for complete table service. It provides dining facilities without the expense of a separate alcove off of the kitchen.

Model "A"—Recess or Surface Type—Comprises three sections. The center section contains the foldaway table, enclosed behind two china cabinets that swing on full-length piano hinges. Drawers for silverware are installed in the lower part of china cabinets. Below the china cabinets is a linen case, containing three shelves, enclosed with doors. Flanking the center unit are side units, each containing a foldaway seat with storage space below. There is sufficient space behind each seat to receive the ironing board which can be furnished in either seat unit depending upon where the cabinet will be installed.

Specify Model "A" for use in kitchens that feature a pantry or other ample storage space, where plan does not include a breakfast room. Or, Model "A" can be used in the breakfast room, thus increasing the efficiency of the floor plan. Model "A," when in use, occupies an overall floor space 63x63 ins.

Note: When the seats are in use, doors of seat cabinets can be closed, thereby eliminating interference.

Model "C"—Surface Type—Comprises three sections. The center section contains the foldaway table, enclosed behind two china cabinets that swing on full-length piano hinges. Behind the folded table, back of china cabinets, are five shelves each 30 ins. long x 8 ins. deep. The lower portion of the center section contains one double cupboard for pots and pans, equipped with two shelves each 29 ins. long x 17 ins. deep. Also a drawer 29x17x4½ ins. deep. Each side section contains four drawers and five shelves. Rebating the nosing and crown mould permits this model to be recessed into the wall.

Specify Model "C" to take the place of a pantry and dinette. This model furnishes 35 sq. ft. of shelf space and 15½ sq. ft. of drawer space, which is ample storage space for foodstuffs, linens, dishes, etc., to take care of the average family of four.

Model "Junior"—Recess Type—This is designed to be installed under window, and contains folding table and seats, as well as two swinging china cabinets housing 42 pieces of chinaware. Table is 28 ins. wide and projects 4 ft. ½ in. from plaster line. Beneath the table is a two-door cupboard with two shelves of sufficient capacity to house silverware, toasters, etc. Can be furnished in cabinet type.

This model is recommended for use in the corner of a kitchen under a window, or in the breakfast room. When used in the breakfast room it serves to "add-a-room" of the same size, since all floor space is cleared for other uses when the table and seats are folded out of the way.

Specifications (All Models)

The fronts, folding tables and seats are birch. The shelving is white pine. The ironing board is pine. The backs of units and bottoms of drawers are ⅛ in. thick Presdwood which will not warp, shrink or swell.

Provide wall space 63 ins. wide for all models. When in use, models occupy an overall floor area 63x63 ins.

Each china cabinet contains five grooved shelves, fitted with wood guard on front edge to prevent dishes from slipping. These cabinets house over 100 pieces of chinaware.

The swinging china cabinets are hung on full-length piano hinges. China cabinets are fitted with leaded French glass doors. Glass is shipped separately within the cabinet. All hardware is bronze, dull nickel finish. All drawers and doors have lipped fronts to make the units dustproof.

All models are shipped "in the white" so that they can be finished at the building to harmonize with surroundings.

Model "A" is made to recess into 4-in. stud partition with studs set flatwise back of center section (see cut). Can also be recessed into tile or metal partitions.

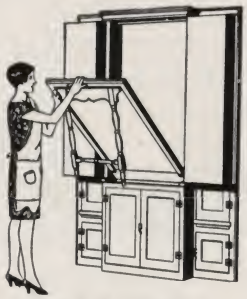
The patented construction of Ti-Di-Nette eliminates any possibility of the table or seats slipping or collapsing. The weight of the table and seats when opened is supported independently of the doors.

Send for Kitchenette Apartment floor plans, free to Architects and Builders.

DETAILS OF VARIOUS MODELS

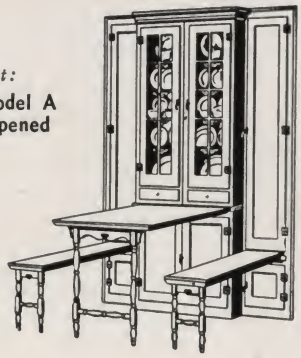


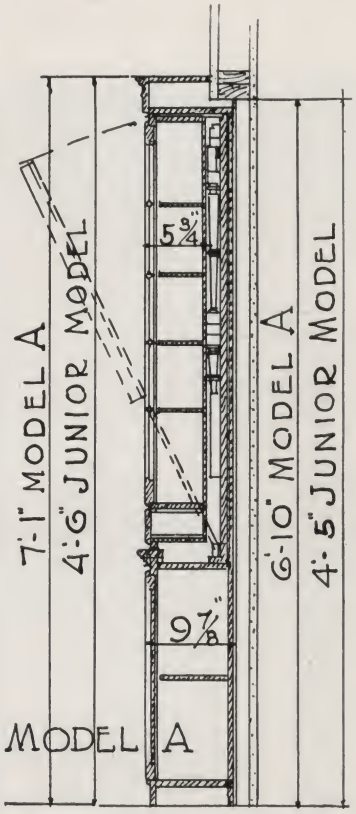
Left: Model A Closed

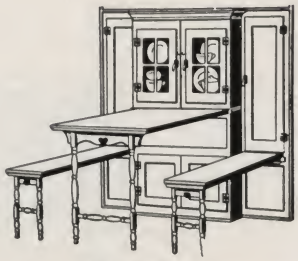


Model A—Opening

Right: Model A Opened



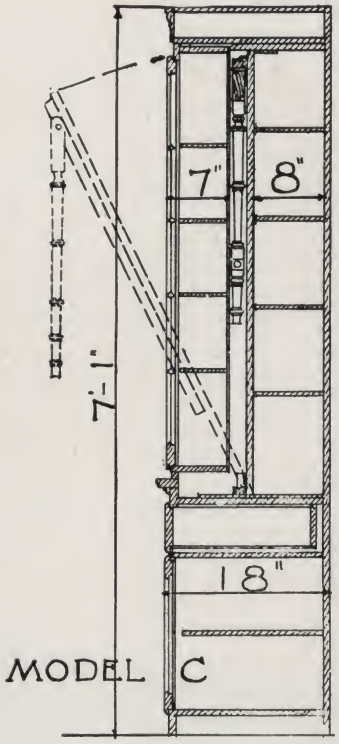


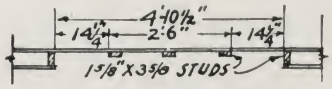


Model Junior



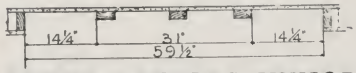
Model C



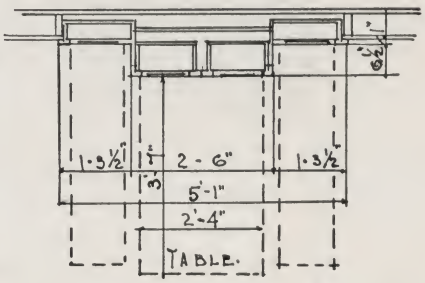


ROUGH OPENING MODEL "A" CABINET

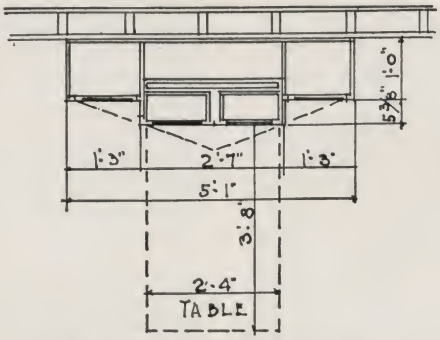
TI-DI-NETTE
REG. U.S. PAT. OFFICE
HANDY SPACE SAVER CABINET



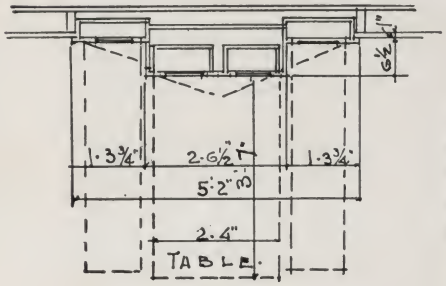
ROUGH OPENING JUNIOR MODEL



PLAN OF MODEL "A"



PLAN OF MODEL C



PLAN OF MODEL "JR."

THE PARSONS COMPANY

15843 Second Boulevard, DETROIT, MICH.

NEW YORK, N. Y., Murphy Door Bed Co., 19 West 44th Street — SAN FRANCISCO, CALIF., Westates Products Co., 236 Rialto Bldg.

THE PARSONS GAS OR ELECTRIC "PUREAIRE" KITCHEN

"Pureaire" Gas Kitchen

PARSONS *Pureaire* KITCHEN

A beautiful piece of furniture, the kitchen consists of the following:

A Steel Cabinet—Scientifically constructed of furniture steel over a cold drawn channel frame, acetylene-welded with flush joints into one rigid and solid unit. All parts are made in dies, uniform and interchangeable. The doors are beautifully embossed and hung on full length chromium plated piano hinges.

A 4-Burner Gas Stove—Having concealed manifold and burners of most modern design. The grates are black porcelain enameled. Also furnished with electric stove (see description).

A 16-in. Oven—Heavily insulated throughout and porcelain lined, containing broiler and baking compartments.

A 21x25-in. Sink with Ribbed Drainboard Integral—All drawn in dies from one piece of heavy vitreous enameling sheet steel, eliminating welding, and because of its construction making the perfect white porcelain enameling possible. The bowl is 12x18x6 ins. deep, and with the drainboard is recessed ⅞ in. from the top of the sink to prevent water from splashing over the sides. The back and side splashers are also white porcelain and 7 ins. high. The sink used in the "Pureaire" kitchen stands out in a class by itself as one of the very finest.

A Refrigerator—Of 4.25-cu. ft. capacity, is of all-steel construction, except for the maple frame around the door. The insulation, Dry-Zero, is one of the most efficient known to refrigeration science. The interior is finished in white enamel and equipped to take any standard electric or gas refrigerating unit.

Shelving and Drawers—There is a total of 20 sq. ft. of shelf space. The utility drawer measures 20x20x4½ ins. and has a padded compartment for cutlery.

Ventilation—Smoke, steam, heat and cooking odors are carried upward through a 6-in. vent connected with the flue. This scientific construction permits fresh air to be taken in from the bottom, circulating upward, leaving the apartment clean and sanitary.

Finish—The kitchen is beautifully lacquered in special Jonquil Green and Ivory, striped in Persian Orange.

Dimensions—All-over dimensions are 80 ins. high, 45¾ ins. wide, 22 ins. deep.

Weight—Net 425 lbs. Crated 500 lbs.

"Pureaire" Electric Kitchen



This kitchen is equipped with *standard* electric stove, having one 8-in., 1800-watt, and two 6-in., 800-watt burners. The oven has two elements and is aluminum lined. The door has two pyrex glass panels and a thermometer. Connected load 5400 watts. A 110-220 volt, three-wire circuit recommended.

Plumbing and Refrigeration

We do not furnish the plumbing fixtures nor the refrigerating coil or compressor, but the "Pureaire" Kitchen comes equipped to take standard plumbing fixtures, and any standard electric or gas refrigerating unit.

Advantages

(1) Saving of floor space. The "Pureaire" Kitchen, because of its compactness and construction, actually offers more storage space than the ordinary 5 ft. 6-in. kitchen, and this in a space of less than 4 ft.

(2) The "Pureaire" Kitchen has everything within reach, saving unnecessary steps. Is easy to keep clean and makes home work more pleasant.

(3) The cooking behind closed doors keeps the apartment clean, cool, and sanitary.

(4) Saves redecorating because the smoke, heat and cooking odors are carried out through the flue.

(5) Fire protection. Because of the "Pureaire" Kitchen being enclosed in all-steel cabinet, it eliminates the fire hazard of the open stove.



(Patented and Patents Pending)

Diagram Shows How Parsons "Pureaire" Kitchen Is Perfectly Ventilated

All heat, greasy smoke and cooking odors are carried up through a 6-in. vent connected with flue

(6) Escaping gas. Should the gas valve be left partly open, the gas will escape through the flue and not injure any one sleeping in the apartment.

(7) Closed up, it is an attractive piece of furniture with the entire kitchen out of sight. Its neatness of design and color add comfort, brightness and charm to the home. It attracts and holds tenants who appreciate beauty, convenience and sanitation.

(8) Low initial cost. Because of being produced in dies and in quantities by an efficient manufacturing organization accustomed to quantity production, in a modern factory under the best conditions, the "Pureaire" Kitchen offers a most exceptional value in kitchen equipment for new apartment buildings, for remodeling old apartments, for hotels, schools, etc.

THE INTERNATIONAL NICKEL COMPANY, INC.

Monel Metal and Nickel and Allied Products

EXECUTIVE OFFICES

67 Wall Street, NEW YORK, N. Y.

MINES AND SMELTER: Copper Cliff, Ont., Canada
REFINERY: Port Colborne, Ont., Canada
ROLLING MILL AND REFINERY: Huntington, W. Va.
FOUNDRY: Bayonne, N. J.

For Our Other Products, see Manufacturers' Index
For Sources of Supply, see our page on Metals

Products

MONEL METAL—is readily available in all of the regular commercial mill forms, including sheet, strip, rods, flats, angles, seamless tubing, spring wire, welding wire and flux, castings, forgings, etc. Centrally located warehouses serve every section of the United States and Canada. (See our section on "Metals," for location of warehouses.)

INCO MONEL METAL TRADE-MARK

Monel Metal

Monel Metal is a registered trade-mark applied to an alloy containing approximately two-thirds nickel and one-third copper. Monel Metal is mined, smelted, refined, rolled and marketed solely by International Nickel.

Advantages of Monel Metal in the Laundry

(1) Resists corrosive action of soaps, sours, bleaches, etc. Rustproof.
(2) Does not spot or stain the wash.
(3) Solid, glass smooth, wear-resisting surface that cannot harm delicate fabrics.
(4) Saves floor space.
(5) Strong as steel, withstands abuse.
(6) Clean, sanitary and attractive in appearance.
(7) Long life, low depreciation.

Uses

The standard uses of Monel Metal are: washers, extractors, soap tanks, hot water tanks, table tops, starching equipment, utensils, sorting tables, pump rods, valves and conveyor piping.

Acceptance of Monel Metal Laundry Machinery

Practically all of the important installations in recent years have specified Monel Metal equipment.

More than seventeen years of daily service, under many different conditions of operation, prove the enduring qualities of Monel Metal. More important than mere long life is the undiminished efficiency provided by Monel Metal equipment. This is possible because Monel Metal machinery parts retain their original form and size, with very little change due to wear and corrosion.

The outstanding laundry installation at the Jersey City Medical Center has sufficient capacity to handle forty thousand pounds of wash daily. It is said that this is the largest institutional installation in the world. Monel Metal washers and tables are used exclusively.

Monel Metal Laundry Plant Accessories

Extractors—The dependability given by Monel Metal washers is also obtained in extractors through the use of Monel Metal baskets and curb. Every size of laundry extractor, ranging from the 17-in. unit to the 48-in. unit is readily available in Monel Metal construction.

Table Tops—The silvery, glass-smooth surface of Monel Metal makes it ideal for the tops of sorting tables and general service tables for ironers, folding machines, and folding and wrapping tables. Monel Metal facilitates handling of clothes, at the same time protecting them from damage due to roughened and splintered wood surfaces.

Plant Trucks—For wet wash transportation, Monel Metal trucks find increasing use. They are available in all types and in a wide range of prices. Advantages derived from Monel Metal trucks are: long life, low depreciation, garment protection, rust and corrosion resistance, low upkeep and improved plant appearance.

Starching Equipment—Monel Metal protects the purity and color of starches in cooking, mixing and applying. The attractive appearance and utility of the metal for this purpose has resulted in a complete line of Monel Metal starching equipment available through Geo. H. Bishop, Chicago, Illinois.

Identification Systems—Monel Metal tags or identification pins insure protection against discoloration at point of attachment. In addition, the wear resistance of Monel Metal enables them to last indefinitely. The vital parts of the Protecto-System, supplied by The American Laundry Machinery Company, are made of Monel Metal.

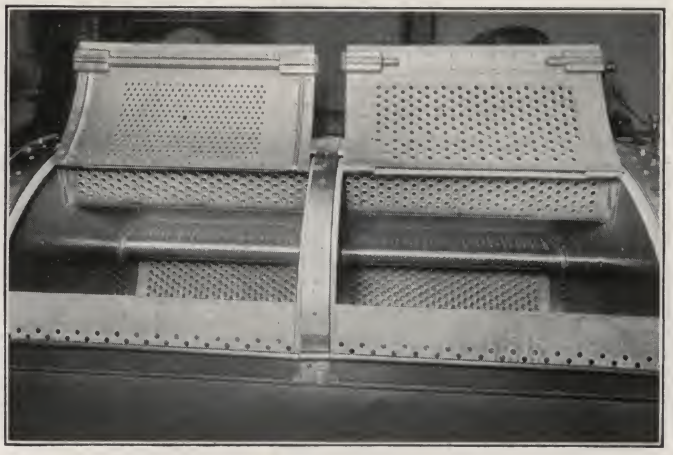
Hot Water Storage Heaters

The importance of a reliable supply of rust-free hot water is fully appreciated by every laundry plant operator and especially by operators of institutional laundries, such as hospitals, hotels, etc. Absolute reliability of a constant supply of rust-free water is provided by specifying Lukens Nickel-clad Steel Plate for the construction of the hot water storage heater unit. Commercial and institutional laundry plants already equipped with Nickel-clad Steel water heaters are convinced that this gives the most practical and economical installation.

Send for more details.

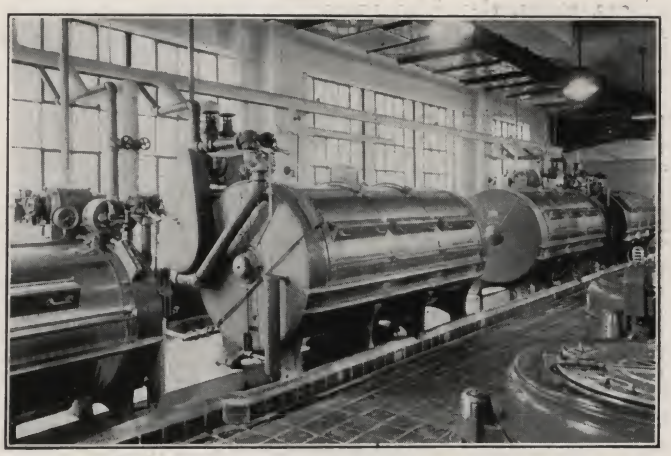
Available Publications

"Construction and Operation of Washing Machines"
"Savings Through Replacements of Obsolete Equipment"
"NESCO Monel Metal Utensils"
"Gravity Operation Successful in Commercial Laundry"
"Laundry Plant Series"—(Comparison of costs of wood washers vs. Monel washers)
"The New Christ Hospital"



The Brooklyn Hospital Has Used This Monel Metal "Cascade" Washer Every Day for Seventeen Years

From all appearances it is good for seventeen years more



World's Largest Institutional Laundry Plant at Jersey City Medical Center

Equipped with Monel Metal "Trojan" Washers

CHICAGO DRYER COMPANY

TELEPHONE
Belmont 1060

2210-2220 North Crawford Avenue
CHICAGO, ILL.

ESTABLISHED 1886

DISTRIBUTORS

NEW YORK, N. Y., Hill Laundry Equipment Co., Inc. (A. E. Morford) Special Representative, 5-33 48th Avenue, Long Island City, N. Y. Telephone STillwell 4-5720
LOS ANGELES, CALIF., E. R. Kuns Co., Inc., 1221 W. 11th Street
ST. LOUIS, MO., Laundry Dryer & Heating Co., 123 No. 11th Street
PHILADELPHIA, PA., J. F. Alexander, 1626 Wood Street
SAN FRANCISCO, CALIF., M. E. Hammond, 557 Market Street
PITTSBURGH, PA., J. M. Webber, Dartmore Avenue, Overbrook
SEATTLE, WASH., S. W. R. Dally, 332 Pioneer Building
DETROIT, MICH., Frank C. Mack, 1500 West Fort Street

COMPLETE LAUNDRY ROOM EQUIPMENT FOR DOMESTIC AND INSTITUTIONAL REQUIREMENTS

Domestic Laundry Equipment

Clothes dryers, electric washers, ironers, ironing boards, complete outfits for use in residences, apartment buildings, schools, etc.

CHICAGO
TRADE-MARK
REG. U. S. PAT. OFF.

Co-operative Service

We invite architects and engineers to make full use of our engineering and layout service. We maintain a staff of engineers, who will be pleased to assist in planning installations to meet requirements. Write for Catalog No. S-32.

Institutional Equipment

Gas and electrically heated ironers, washers, extractors, tumblers, and other complete accessories for use in hotels, hospitals, clubs and institutions.

Clothes Dryers

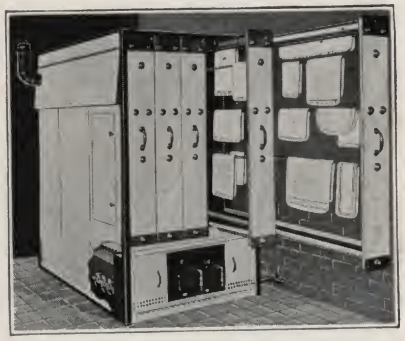
Built in various sizes and types to meet requirements. May be heated by means of gas, steam, electricity or coal stove attached. Framework made of ⅛-in. thick angles of suitable size. Casing is of best quality galvanized sheet steel. When so specified, casing may be made double with air space or double and interlined with sheet asbestos.

All our gas heated dryers are provided with our patented indirect gas heating system.

Gas Heated Dryers

Indirect gas heating system means that the burners are contained in an interior drum. No flame is exposed. Equipped with complete air circulating system for the intake of air and removal of moisture. Hanging bars are of specially galvanized tubular pipe and ventilated so as to prevent overheating. Dryers equipped with racks or draws are built to order. When space will permit, these dryers are generally built 7 ft. high and 7 ft. long. These measurements may be varied to suit conditions. When dryer is built 7 ft. long, the total length with racks fully extended is 13 ft. 6 in.

Chicago-Francis Dryer Type S. C. 5909



Equipped with self-contained (type S.C.) racks, which completely eliminate the overhead track system on the outside of dryer. Racks operate on metallic ball bearing rollers. Built in various sizes containing 2, 3, 4, 5, 6, 7, 8 or more racks or draws, as may be specified. Each rack measures 9 ins. wide and has a hanging capacity of 39 lin. ft. Heated by means of gas, steam, electricity, or coal stove attached, as may be specified. Illustration shows dryer heated by means of gas.

Chicago-Francis Dryer Type 5909



Equipped with overhead pipe track. Built in sizes containing 2, 3, 4, 5, 6, 7, 8 or more racks, as may be specified. Each rack measures 9 ins. wide and has a hanging capacity of 39 lin. ft. May be heated by means of gas, steam, electricity, or coal stove attached, as may be specified. Vent pipe measures 5 ins. in diameter and may be brought out on either side, close to rear end, or extreme top at rear end, as may be required.

Chicago-Francis Gas Heated Cabinet Dryer



Made in four sizes: G-24 measures 72 ins. high, 48 ins. wide, 24 ins. deep; hanging capacity 50 lin. ft. G-209 measures 72 ins. high, 62 ins. wide, 21 ins. deep; hanging capacity 60 lin. ft. G-309 measures 72 ins. high, 80 ins. wide, 21 ins. deep; hanging capacity 85 lin. ft. G-409 measures 72 ins. high, 80 ins. wide, 26 ins. deep; hanging capacity 117 lin. ft.

Also made for electric or steam heat.

Diameter of vent pipe at top is 5 in.

Chicago Gas Heated Compartment Dryer

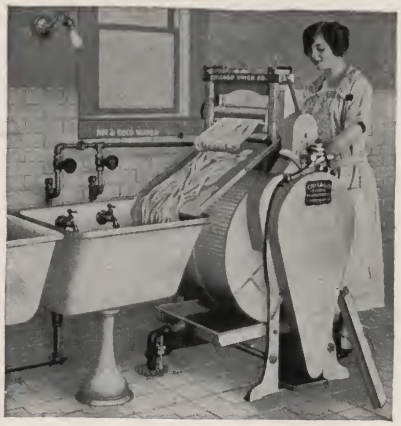
Can be supplied with any number of compartments desired.



Compartment G-2972 contains two 9-in. racks; measures 72 ins. long, 78 ins. high, 21 ins. wide; hanging capacity 65 lin. ft. G-2984 contains two 9-in. racks; measures 84 ins. long, 78 ins. high, 21 ins. wide; hanging capacity 78 lin. ft.

Illustration shows dryer containing three compartments. May be equipped with self-contained (Type S.C.) racks, when so specified.

*Chicago Electric Washer and Safety Wringer



For use in residences and small institutions. Only machine on market with wringer equipped with automatic conveyor for conveying clothes into rolls, and also automatic safety stop, which prevents tearing of clothes and insures absolute protection against possible accidents to operator when wringing clothes.

Washer tub made of copper with nickeloid plating on inside. Framework is of heavy iron. Outside of washer tub, including framework, finished in white enamel. Provided with water inlet for stationary water and drain connections.

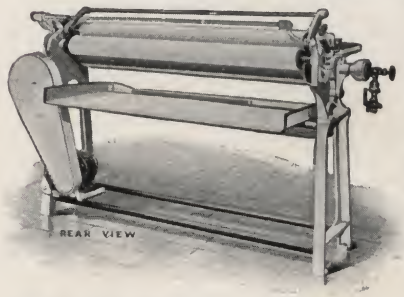
Equipped with 14-in. wringer. Motor ¼ hp.

When planning, recommend machine be placed at either right or left end of stationary laundry tubs.

No.	Capacity, sheets	Capacity, dry weight, lbs.	Washer tub measures, in.	Occupies floor space, in.
214	9	15	26x18	26x34
314	12	20	26x21	26x37
414	15	25	26x24	26x40
514	18	30	26x27	26x43

Nos. 414 or 514 can be supplied with monel metal tub, when so ordered.

*Chicago Three-roll Gas Heated Ironer



Suitable for ironing flatwork, such as sheets, pillow cases, napkins, towels, table linens, etc. For use in residences and small institutions. May be equipped with foot lever control, when so specified.

Contains 3 rolls, consisting of 1 heated and 2 compression rolls. All the rolls revolve, no wear on linens.

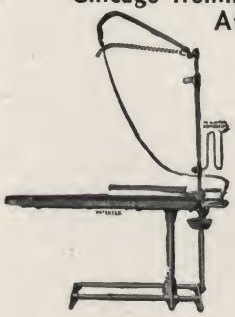
Made with atmospheric gas burner or burner with gas blower attachment in the following sizes:

Ironer No.	Length rolls, in.	Outside dimensions, in.	Motor, hp.	Type of gas burner
3-50A	50	28x75	¼	Atmospheric
3-50B	50	28x75	⅓	Blower att.
3-60A	60	28x85	¼	Atmospheric
3-60B	60	28x85	⅓	Blower att.
3-75B	75	28x100	⅓	Blower att.

Equipped with automatic safety stop finger guard approved by New York State Labor Safety Commission.

No. 3-50A size also made for electric heat. Three heats. Maximum current consumption 9000 watts. Heaters made for operating on 220 or 230 volts only.

*Chicago Ironing Board and Stand with Electric Attachment No. 302



Ironing board measures 60 ins. long, 1¾ ins. thick. Underside of board provided with patented attachment for holding padding. Base and stand finished in white enamel. Stand is self-contained and need not be fastened to floor.

Upright standard, switch and fittings beautifully finished in chrome plate.

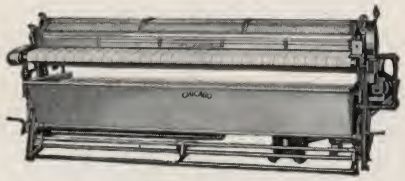
Made for operating on 110-volt current only.

Chicago Institutional Laundry Equipment

Completely eliminates the use of high pressure steam. Built in various sizes and types to meet the requirements of small, medium sized, or large hotels, hospitals, clubs and institutions of all kinds.

Chicago Six-roll Gas Heated Flatwork Ironer with Motor and Blower Attached

Adapted for use in hotels, hospitals, clubs and institutions. A size for every need. Solves the ironing problem without the use of high pressure steam. Linens when run through singly may be taken direct from extractor—dried and ironed—in one



pass. All the rolls revolve, no wear on linens. Rolls compressed or raised from heated roll instantaneously. Equipped with ribbon feed attachment, including automatic safety stop finger guard, approved by New York State Labor Safety Commission.

Hundreds of these machines now in actual service. Built in various sizes as follows:

Ironer No.	Contains	Occupies floor space, in.	Motor, hp.
6—60	6 rolls 60 in. long	40x90	½
6—80	6 rolls 80 in. long	40x110	½
6—100	6 rolls 100 in. long	40x130	½
6—120	6 rolls 120 in. long	40x150	½

Provide 1-in. gas supply. The six-roll type may be supplied for electric heat in the following sizes: 75 and 100 ins.

Chicago No. 11-104 Gas Heated Flatwork Ironer With Motor and Blower Attached

Contains 11 rolls consisting of 1 heated and 10 compression rolls. Rolls measure 104 ins. in length. Motor 1½ hp. Occupies floor space 8 ft. x 11 ft. 6 ins. Capacity approximately 6000 pieces daily. Write for Bulletin No. 11-104.

Chicago-Direct Motor Driven Cylinder Type Washer



Operated by means of electric motor contained in housing. The direct unit drive attachment eliminates noisy and overhead line shaft; allows easy installation and economy in operation. Made with wood shell and wood cylinder. Brass trim.

Built in sizes as follows:

Type	Washer No.	Cylinder, in.	Motor, hp.	Capacity, dry weight, lbs.	Occupies floor space, in.
E.W.	3136	31x36	¾	50	46x76
E.W.	3152	31x52	1	75	46x92
E.W.	3652	36x52	1½	100	54x100
E.W.	4064	40x64	2	200	60x126

May be supplied with monel metal trim when so ordered, in which event they are designated as Type E.M.



Chicago-Direct Motor Driven Extractor, No. 20 in. Type H.M.

Basket measures 20 ins. in diameter and is spun from extra heavy copper, tinned on inside and heavily reinforced to prevent bulging. Is supplied with safety cover interlocking device. Operated by means of 1½ hp. motor. Occupies floor space 30x56 in. Larger sizes can be supplied when so required.

Asterisk * indicates—Tested and approved by the Good Housekeeping Institute conducted by the "Good Housekeeping Magazine."

JUDELSON DRYER CORPORATION

Makers of Efficient Drying Equipment Since 1892

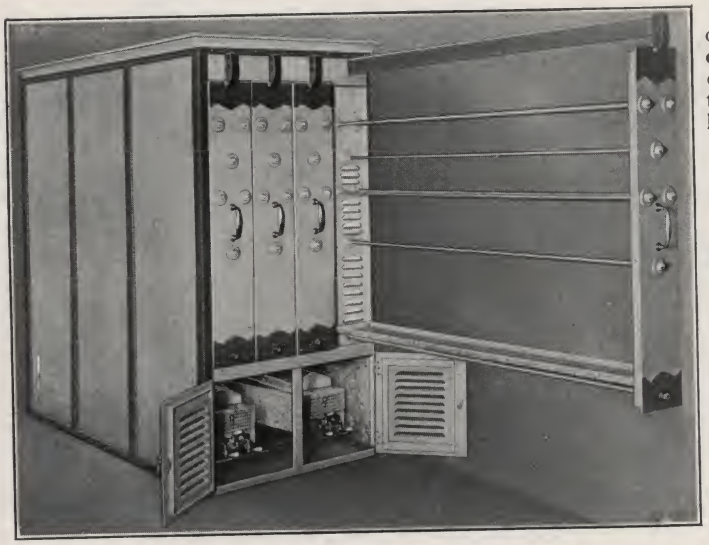
"Domestic" Laundry Equipments

EASTERN SALES OFFICE: 21-12, 39th Avenue, LONG ISLAND CITY, N. Y.

FACTORIES: Wheeling, West Va. and Long Island City, N. Y.

DRYERS—WASHERS—IRONERS—TABLES—SOAP TANKS—STARCH COOKERS

Complete Laundry Equipment for Residences, Apartment Houses, Clubs, Institutions, Schools, Gymnasiums, Fire and Police stations, etc.



"Judelson" Special Clothes Dryer—Custom Built

The Judelson Self-Contained Extension-Rack Dryer has been given the preference in many of the finest homes in America. Its rugged construction, design and finish, specially selected materials, highest type of workmanship and engineering skill, together with approved scientific principles and many exclusive features make this dryer the choice of those who want the best.

The racks slide in and out smoothly on a patented, three-point, steel ball-bearing suspension arrangement, eliminating the disadvantages of the old-fashioned overhead traveler bars on ceiling and the obsolete floor carriage type.

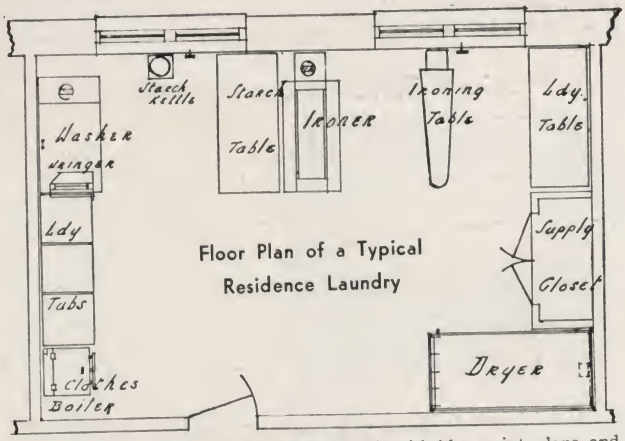
Equipped with completely enclosed interior indirect heat radiator.

Heated by gas, electricity or steam, which circulates dry, fresh, sterilized air evenly throughout drying chamber. Furnished with any number of racks to suit requirements.

Dimensions—Height 7 ft.; depth 7 ft.; overall width depends upon number of racks. The racks are 9 in. wide and equipped with 6 hanging rods having a total of 39 ft. linear hanging capacity per rack.

Judelson Clothes Dryers embody the specialized experience of more than a quarter of a century in manufacturing scientific drying equipment—and are the last word in safety, efficiency, operation, construction and appearance. They have stood the test for over twenty-five years in the finest homes and apartment houses in America. They possess many exclusive features that insure their performance satisfying the most critical user—and are made in a variety of standard sizes and styles to meet the exacting requirements of all types of private dwellings, apartment houses and institutions.

Special dryers built to order for practically any domestic, institutional or industrial purpose. Equipped with gas, electricity or steam heating systems.



Floor Plan of a Typical Residence Laundry

Our engineering department will be glad to furnish blue print plans and cooperate in laying out domestic laundries or drying equipment for any type of building. You are cordially invited to avail yourself of this free service.

Dimensions and Specifications of Judelson Dryers

Cat. No.	Height, over all	Depth	Width	Linear hanging capacity
No. 903	6 ft., 9 in.	6 ft.	2 ft., 7 in.	97 ft.
No. 902	6 ft., 9 in.	6 ft.	1 ft., 10 in.	65 ft.
No. 600	6 ft.	2 ft.	6 ft.	65 ft.
No. 300	6 ft.	2 ft.	3 ft., 6 in.	33 ft.

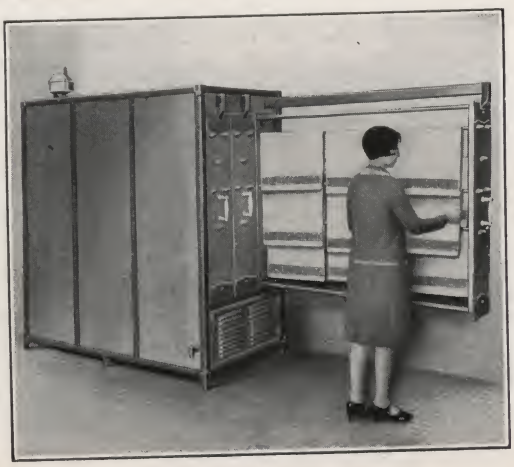


No. 600 Cabinet Dryer

The acme of perfection in Cabinet Type Dryers. Equipped with 12 movable hanging rods. Will take full load of the ordinary washing machine. Finished in durable ivory lacquer with harmonizing green trim.

No. 903 Extension-Rack Type Dryer

The No. 903 dryer is equipped with three racks, each 9 in. wide, each rack equipped with 6 hanging rods. The No. 903 has an outstanding field in the larger and finer homes. A smaller dryer, the No. 902, is made with two racks, having a hanging capacity to accommodate the full load of the ordinary washing machine.



TROY LAUNDRY MACHINERY CO., INC.

Manufacturers of Complete Laundry and Dry Cleaning Equipment for Commercial and Industrial Laundries, Hospitals, Sanatoria, Hotels, Dry Cleaners, Schools and Clubs

EXECUTIVE OFFICES

100 Sixth Avenue, NEW YORK, N. Y.

SALES OFFICES

BOSTON, MASS., 514 Atlantic Avenue
CHICAGO, ILL., 2231 So. Parkway
LOS ANGELES, CALIF., 767 E. Washington Street
NEW YORK, N. Y., 100 Sixth Avenue
SAN FRANCISCO, CALIF., 1201 Folsom
SEATTLE, WASH., Eighth & Harrison

EUROPEAN AGENTS: James Armstrong & Co., Ltd., LONDON, PARIS

FACTORIES: EAST MOLINE, ILL.

Products

Motor or Belt Driven Wood and Metal Washers; Extractors; Tumblers; Ironers; Presses; Dry Rooms; Starch Equipment; Blanket Napping Machines; Dampeners; Curtain Equipment; Electric Irons; Tables; Trucks; Tubs; Clarification Systems; Stills, etc.

The Company

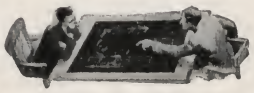
Pioneer manufacturers for more than one-half century. Eighty-three acres of model plant facilities. Products fully guaranteed.

Troy Advisory Service

This company maintains an advisory service which will plan, lay out, estimate and prepare specifications for institutional and commercial laundries, or dry cleaning plants of any size or type. Troy offers, without charge, the *Troy Advisory Service* to assist you in this work.

Description

Washers—(1) Trojan "Balanced-Drive" monel washers, built in three cylinder diameter sizes—36, 42 and 54 in.—and all standard lengths. Two smaller diameters available with horizontally or vertically partitioned cylinders. Larger diameters in the "Y-pocket" type; (2) Spartan washer, a machined-jigged, precision-construction wood machine. Brass, galvanized or monel trim. Built in all standard sizes. (3) "Minute-Man" Washer, oscillating and cylinder type for small loads. Especially designed for silks, rayons, fugitive colors. Sizes 25x18 in. and 25x36 in.



Extractors—(1) Mercury "free-floating" and "self-balancing" clear top extractor. Basket suspended on rubber sockets, operates independently of curb and motor mounting, thereby reducing current consumption and eliminating transmission of vibration to flooring, despite fact that it may be operated with more than 20 lbs. out-of-balance load. Built in 40, 54 and 60-in. diameters. (2) Marathon "pedestal type," square base extractor. For smaller loads—diameter sizes 20 to 30 in. (3) "Minute-Man" extractor, 18-in. diameter, complement to "Minute-Man" washer.

Tumblers—(1) Premier, up-draft suction type. One pass. Exceptionally huge volumes of screened air. Low temperature drying. High thermal efficiency. Built in 36 and 42-in. diameters. (2) "Minute-Man" tumbler 36x30 in. and 36x42 in. Complement to small, handy "Minute-Man" line.

Ironers—Flatwork chest and cylinder type. Steam heated. Single roll to eight rolls. For handkerchiefs and delicate work, up to heavy, large volume work. Equipped with pressure mechanism, speed controller, feeding devices, etc.

Safety Features

All Troy machines are equipped with full safety devices.

Information Required

When estimating or planning laundry equipment it is necessary and advantageous to all parties concerned to supply the following information: (1) Type and size of institution or plant; (2) Nature of work to be done; (3) Number of square feet of floor space available for laundry; (4) Height of ceiling; (5) Size of doors, windows, or other openings to laundry; (6) Current characteristics of lighting system and power lines; (7) Ventilation facilities available; (8) Number and size of electric power outlets; (9) Number and size of electric motors; (10) Number and size of steam, water and waste outlets; (11) Size of soiled linen room; (12) Size of clean linen room.

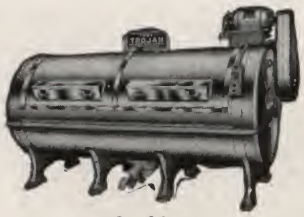
New Features

Recently developed refinements include the "Balanced Drive" principle of the Trojan washers; precision-constructed Spartan wood washers; direct drive and braking of the Mercury Extractor; a complete new unit for delicate fabrics and small lots; tumblers with higher thermal efficiency and numerous others described in new literature now available.

Literature

Blueprints, floor plans, installation, institutions, latest catalogues and circulars furnished you on request.

TROY
LAUNDRY MACHINERY



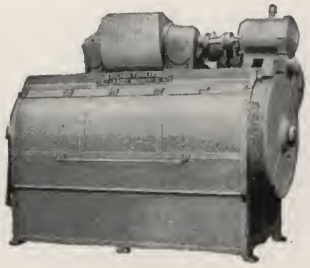
42 x 84-in.
Troy Trojan
"Balanced-Drive"
Extractor



48-in.
Troy Mercury
"Free-Floating"
Extractor



"Big 8"
Troy Flatwork Ironer
with Ventilating
Canopy



42 x 90-in.
Troy Premier
"High Thermal"
Tumbler

HASLETT CHUTE AND CONVEYOR CO.

Aluminum Laundry Chutes; Waste and Rubbish Chutes

Real Estate Trust Building, PHILADELPHIA, PA.

FACTORY: OAKS, PA.

For Fire Escapes and Conveyors, see Manufacturers' Index

Haslett Waste or Rubbish Chute Specifications

Waste paper or rubbish chute with positive acting gear and cam interlocking door hoppers as manufactured by the HASLETT CHUTE AND CONVEYOR CO., Oaks, Pa.

Stack—14-gauge steel, all seams flanged out and riveted. Standard sizes 22, 28, 34 and 46 in. square.

Cap—14-gauge steel with collar for vent.

Interlocking Door Intakes—Hoppers and doors 14-gauge steel, welded construction. Intakes have two doors, one through which rubbish is placed in hopper and other opening into stack. Doors connected to operating handle by interrupted cut tooth gears and cams, so that one door is securely locked in closed position, while other opens and closes.

Sprinkler Protection—Accessible recesses for sprinkler heads provided where required. (For average chute locate one at top of stack and one immediately above outlet.)

Outlet—90-degree elbow, 12-gauge steel sides and ¼-in. plate bottom. 12-gauge steel hinged door with heavy double latch. Elbow and door reinforced with angles.

Supports—Elbow supported by structural steel strut from foundation. Stack carried and stayed at each floor by angles across floor opening.

Painting—One shop coat gray lead and oil paint.

Work Not Included—Vent, sprinkler appliances, field painting; foundations and openings through floors. Enclosing walls not to be constructed until chute is erected.

Haslett Aluminum Laundry Chute Specifications

Aluminum laundry chute as manufactured by the HASLETT CHUTE AND CONVEYOR CO., Oaks, Pa.

Tube—Furnished in three standard diameters, 18, 20 and 24 in. Built of 16 B&S gauge, aluminum plate rolled to Haslett standards for linen chute construction. Vertical seams lock joined, horizontal seams slip joined, all seams leakproof. No exposed rivets inside of tube.

Intake Throats—16 B&S gauge aluminum plate welded to tube, forming an integral part of chute. Throats to have sloping bottoms.

Tube Cap—Flat aluminum plate with collar for 3-in. standard vent welded to center.

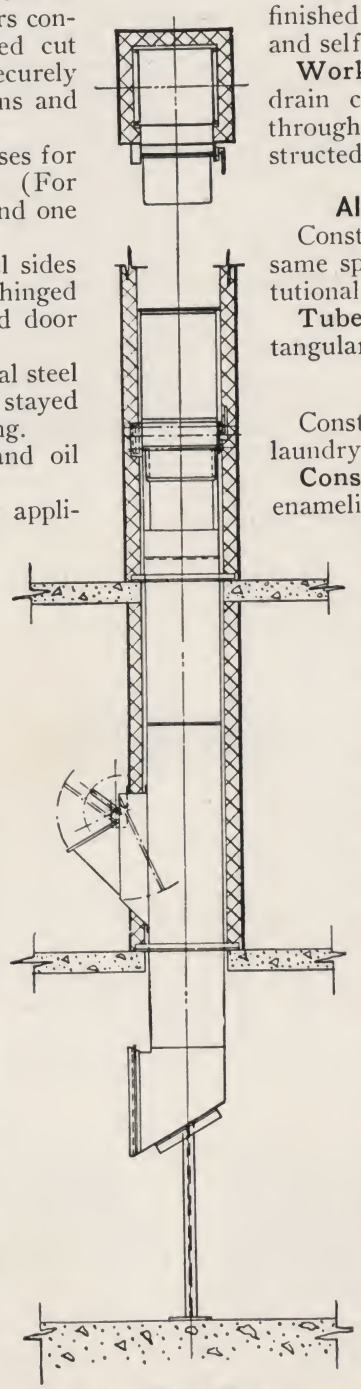
Supports—Outlet supported by structural steel strut from foundation. Tube supported and stayed by four hanger rods from angle frame at each floor.

Flushing Ring—¾-in. brass pipe flushing ring provided with tee for water connection.

Intake Doors—Solid cast aluminum intake doors buffed and polished, located approximately 4 ft. above each floor. Doors furnished in sizes indicated by table on opposite page, provided with soft rubber cushions closing against polished cast aluminum frames set flush with partition walls. Doors equipped with chromium plated latches.

Outlet—90-degree elbow same diameter as chute, 16 B&S gauge aluminum plate welded into single unit, encased in 14-gauge steel, equipped with standard 2-in. cast iron flange for drainage connection. Sand finished cast aluminum door, with rubber cushion and self-latching lever, same type as intake doors.

Work Not Included—Vent, flushing and drain connections. Foundations and openings through floors. Enclosing walls not to be constructed until chute is erected.



Haslett Waste Chutes

Aluminum Household Laundry Chutes

Constructed of the same materials and to the same specifications of workmanship as the institutional chutes.

Tube—12 in. diameter only. Square or rectangular chutes built to meet space requirements.

Ceramic Steel Laundry Chutes

Constructed of the same design as the aluminum laundry chute with the following exception:

Construction—Tube to be built of 16-gauge enameling steel with all joints welded and ground smooth. Intakes and other appliances to be welded to tube sections as required.

Glass enamel to be fused to the entire inner and outer surface of the chute sections. No rivets employed in this construction.

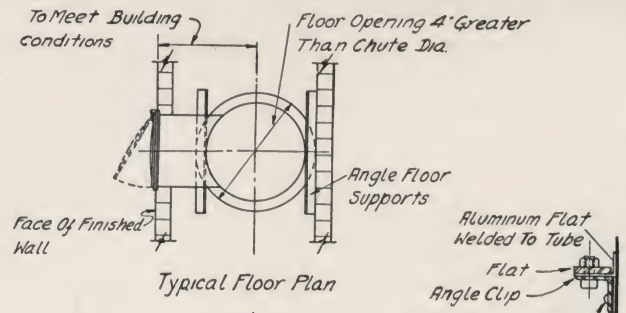
Haslett Installations

Hotels

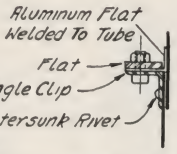
BUILDING, LOCATION AND ARCHITECT	STORIES
New Yorker, New York, N. Y. Sugarman & Berger	44
New Waldorf Astoria, New York, N. Y. Schultze & Weaver	42
Governor Clinton, New York, N. Y. Murgatroyd & Ogden	30
St. Moritz, New York, N. Y. Emery Roth	31
Parker House, Boston, Mass. Desmond & Lord	14
American Women's Club, New York, N. Y. Benj. Wistar Morris	25
N. Y. Athletic Club, New York, N. Y. York & Sawyer	18
Breakers, Palm Beach, Fla. Schultze & Weaver	9
Benjamin Franklin, Philadelphia, Pa. Horace Trumbauer	19

Hospitals

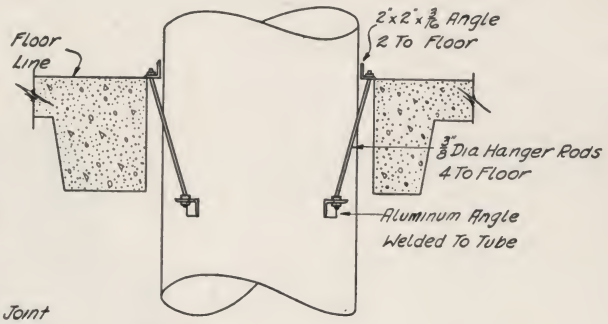
BUILDING, LOCATION AND ARCHITECT	CHUTES
New York State Hospitals State Architect	135
Massachusetts State Hospitals Gordon Robb	13
Los Angeles County General Hospital Edwin Bergstrom, Myron Hunt, Pierpont Davis, Sumner P. Hunt and William Richards, Architects	8
Hahnemann, Philadelphia, Pa. H. Hall Marshall	2
Johns Hopkins, Baltimore, Md. Jos. E. Sperry	3
Yale Medical School, New Haven, Conn. H. C. Pelton	3
Battle Creek Sanitarium, Battle Creek, Mich. M. J. Morehouse	2
Mt. Sinai, New York, N. Y. Kohn & Butler	1
Arnot Ogden Memorial, Elmira, N. Y. York & Sawyer	1



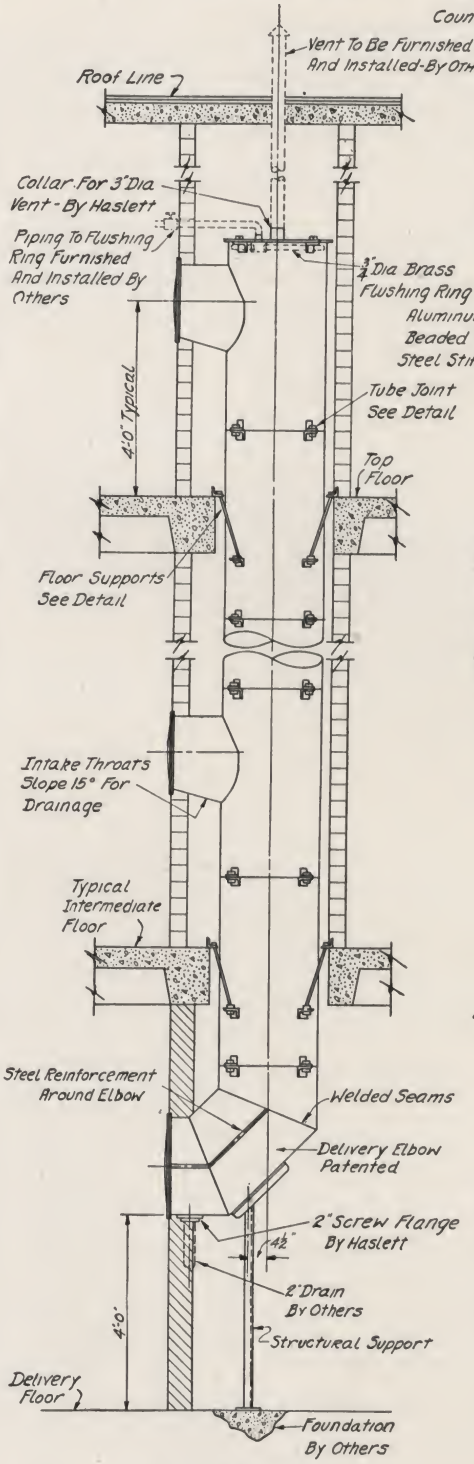
Typical Floor Plan



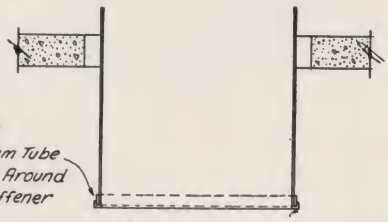
Detail Of Tube Joint Patent Applied For



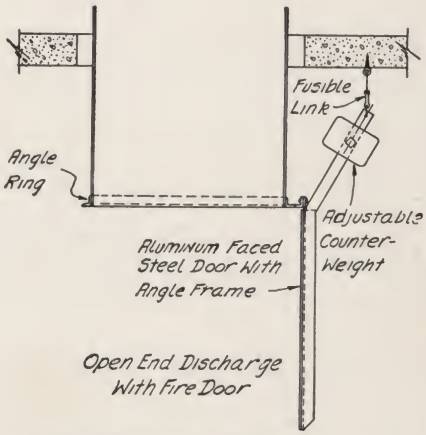
Detail Of Floor Supports



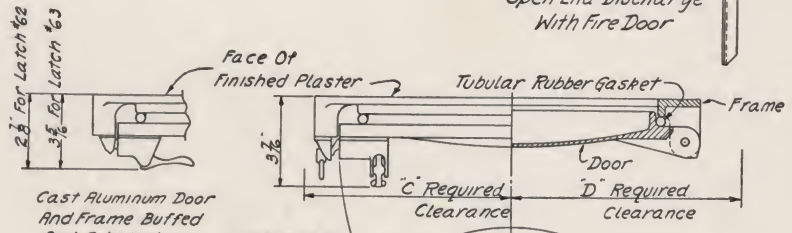
Typical Elevation

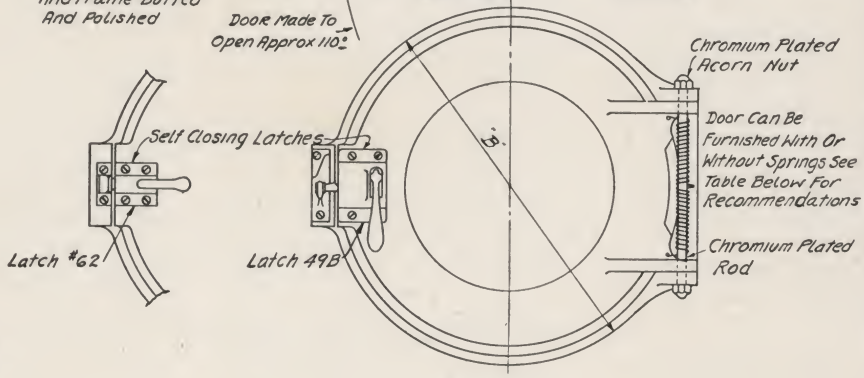


Open End Discharge



Open End Discharge With Fire Door





Intake Door

Door dia.	B	C	D	Latch	Springs	Chute dia.
12	1'- 2¾"	8½"	1'- 1"	#62	Without	12" and 18"
16	1'- 6¾"	10½"	1'- 4⅜"	#49B	"	18"
18	1'- 8¾"	11½"	1'- 6"	#49B	"	20" and 24"
20	1'-10¾"	1'-0½"	1'- 8⅛"	#49B	"	24"
22	2'- 0¾"	1'-1½"	1'- 9⅞"	#49B	"	24"
24	2'- 2¾"	1'-2½"	1'-11½"	#49B	"	24"
18	1'- 8¾"	11½"	1'- 6½"	#49B	With	20" and 24"
20	1'-10¾"	1'-0½"	1'- 8⅛"	#49B	"	24"
22	2'- 0¾"	1'-1½"	1'- 9⅞"	#49B	"	24"
24	2'- 2¾"	1'-2½"	1'-11⅛"	#49B	"	24"

Discharge Doors To Be Of Chute Diameter Unbuffed Without Springs Using #62 Or #63 Latch As Shown In Table For Polished Doors

Details of Aluminum Laundry Chute

METAL-VITRIX COMPANY

611 Bank Lane N., LAKE FOREST, ILL.

Representatives in All Principal Cities, see Local Telephone Directory

Products

METAL GLASS LAUNDRY CHUTES; METAL GLASS RESIDENCE LAUNDRY CHUTES; LOCKSEAM METAL LAUNDRY CHUTES; LOCKSEAM METAL RUBBISH CHUTES.



Metal Glass Laundry Chutes

Standard—A clean, glistening enameled tube built of Armco Ingot Iron and Glass Enameled, both *inside* and *outside*. Non-riveted.

Residence—Made of same material and constructed in same manner as standard Metal Glass Chutes, except not provided with vent and drain connection and flushing ring.

Lockseam Metal Laundry Chutes

For use as linen chutes in institutions, hotels, hospitals, etc. Made of aluminum, Allegheny, monel, copper, galvanized steel, etc. Vertical joints are lockseamed. The horizontal joint is made by telescoping the upper into lower section. A 1-in. flange is turned at top of the lower section and an angle iron riveted on near bottom of the upper section. The flange and angle are bolted together. When galvanized steel is used all raw edges on inside are covered with tin or solder.

All steel work not galvanized is painted one coat before leaving the factory.

Lockseam Metal Rubbish Chutes

For waste and paper chutes in buildings of any type. Made square in four sizes. For details of construction, see specifications below. Intake hopper is made with two doors—when outer door is opened, inner door automatically closes; when outer door is closed, inner door opens to allow rubbish to enter chute.

Sprinkler Jet

As a standard accessory to the Lockseam Rubbish Chute and to *all* laundry chutes, there is offered a connection for a fusible sprinkler jet placed in an offset in the chute. As many jet connections as may be desired can be placed at different locations.

(A) METAL GLASS LAUNDRY CHUTE—SPECIFICATIONS

Note: *This same specification applies to our Welded Armco Iron Chutes except that in (A1) (A2) Glass Enameled is omitted and chute is painted one coat of metallic paint inside and out.*

(A1) General—Furnish and install where indicated on plans (specify number) Standard Metal Glass Laundry Chute(s) (state which) [12 in.] [18 in.] [20 in.] [24 in.] inside diameter as manufactured by the METAL-VITRIX COMPANY, Chicago, Ill.

(A2) Materials and Construction—The entire area of chute, both *inside* and *outside*, shall be surfaced with Glass Enamel fused into the metal. Chute shall be made of 18-gauge Armco Ingot Iron with all seams welded and ground perfectly smooth before enameling. *No rivets shall be employed.* Chutes shall be made in suitable sections to meet building requirements. Sections shall be flanged at ends and joined together securely with galvanized bolts. Provide flat rubber gasket between all joints.

(A3) Door Throats—The throat sections to which service doors are attached shall be welded to and form an integral part of the chute proper. They shall be of lengths required on plans to bring the door frames flush against the finished wall. Each throat shall be made with a groove in the bottom side sloping downward in the direction of travel to insure prompt drainage when the chute is flushed.

Note: *Throats are 20-in. diameter on 24-in. size, 18-in. diameter on 20-in. and 18-in. sizes, and 12-in. diameter on 12-in. size.*

(A4) Service Doors—At each floor to be served, provide one solid, polished, Cast Aluminum Door and Frame, the center of which shall be 47 in. above the finished floor line. Each door and frame shall be cast with hinge lugs and fitted with one ⅜-in. brass nickelplated hinge rod. The door frames shall be securely fastened to throat flanges by brass nickelplated screws and aluminum backer rings. Each door shall be furnished with quick acting refrigerator latch and with round rubber cushion gasket. All doors shall be water- and smoke-tight.

Note: *Doors are 20-in. diameter on 24-in. chute, 18-in. diameter on 20-in. and 18-in. chutes and 12-in. diameter on 12-in. chute.*

(A5) Outlet—***Note:*** *Select type desired.*

(A5a) The bottom of chute shall terminate in a 90° elbow of same diameter as the chute proper, center of which shall be 47 in. above the finished floor line. It shall be fitted with a heavy cast aluminum door, attached to chute in the same manner as service doors. The door shall be provided with a round rubber cushion gasket and shall seal watertight when closed. In the elbow there shall be a standard 2-in. iron pipe connection with strainer, for connecting drain pipe to sewer.

(A5b) The bottom of the chute shall terminate in a 45° elbow of same diameter as the chute proper, without a door.

(A5c) The bottom of the chute shall terminate in a straight run .... inches below basement ceiling, without a door.

(A5d) Furnish outlet with an automatic fire door.

Note: *Adapted to (A5c) only.*

(A6) Top—Approximately 24 in. above top floor service door provide enameled disc top with 3-in. standard iron pipe connection in center for vent pipe. Top shall be bolted to flange of chute section and provided with a flat rubber gasket.

(E) LOCKSEAM METAL RUBBISH CHUTE—SPECIFICATIONS

(E1) General—Furnish and install where indicated on plans (specify number) Lockseam Metal Waste Chute(s) as manufactured by the METAL-VITRIX COMPANY, Chicago, Ill.

(E2) Materials and Construction—The tube shall be constructed of No. 14 U. S. gauge steel (galvanized, or blue annealed—state which), 13x13 in., 22x22 in., 28x28 in., 31x31 in. square (state which). All seams horizontal and vertical shall be flanged and bolted together.

(E3) Inlets—(Patents pending.) At a convenient point above each floor there shall be provided an inlet hopper made of No. 14 U. S. S. gauge steel equipped with an inner and outer door. Opening of hopper shall be 2 in. less than size of tube hopper. Hopper doors shall be so arranged that one door will always be closed when the other door is open. The lug holding the inner door closed shall be provided with an adjusting screw to maintain the proper tension.

(E4) Outlet—At a point approximately 4 ft. above the delivery floor the chute shall terminate in an elbow boot made of No. 12 U. S. S. gauge steel with a heavy hinged door provided with a substantial latch.

Note: *The following are alternate items for the outlet:*

(1) Outlet to be furnished with automatic fire door.

(2) Outlet to terminate in 45° elbow.

(3) Outlet to terminate in straight run ... inches below basement ceiling.

(E5) Top—The top of chute shall be a cover made of No. 14 U. S. S. gauge steel. This top shall be fitted with a 3-in. diameter cast iron screw flange for vent.

(E6) Supports—At each floor the chute shall be supported by two angles, bolted to the flanges. The end of these angles shall be supported to the floor. The bottom of the chute shall be supported by a structural steel cradle resting on floor.

(E7) Sprinkler Jets—Provide (specify number and location) standard 1-in. size automatic sprinkler jet(s) set in (an) offset recess accessible from the inlet door.

(E8) Painting—All steel work not galvanized shall be painted one coat before leaving factory.

(E9) Piping—All piping to and from chute (including vent pipe and ventilator) shall be furnished and installed by others.

ESTABLISHED 1888

THE PFAUDLER CO.

Glass Lined Steel Laundry Chutes, Tanks, Mixers and Process Equipment

ROCHESTER, N. Y.

SALES OFFICES

NEW YORK, Suite 1103, 8 West 40th Street SAN FRANCISCO, Pfaudler Sales Co., 122 New Montgomery Street CHICAGO, 1422 Conway Building

FOREIGN SALES OFFICES

LONDON, W. C. 2, ENGLAND, Enameled Metal Products Corp., Ltd., 56 Kingsway BUENOS AIRES, ARGENTINA, Borgo and Kubli, 666 Cangallo

SYDNEY, N. S. W., AUSTRALIA, Mauri Bros. & Thomson, 123-131 Castlereagh Street

FACTORIES: ROCHESTER, N. Y. and ELYRIA, OHIO

Products

GLASS LINED STEEL LAUNDRY CHUTES for hospitals, hotels, apartments, clubs, residences.

GLASS LINED, PLAIN STEEL or METAL ALLOY CHUTES for rubbish or dust.

GLASS LINED, STEEL STORAGE TANKS, MIXERS and PROCESS EQUIPMENT for dairy, food, beverages, chemical and allied industries.

(Reg. U. S. Pat. Off.)

New Pfaudler Glass Lined Steel Laundry Chutes

(1) Exclusive Pfaudler Features—Made of glass lined steel, insuring maximum cleanliness and strength; ⅛-in. steel used (strongest of any chute) which means there will be no buckling often caused by settling of building and which sometimes renders flimsy chutes unserviceable, tearing linen; slanting door throat construction, allowing linen to slide by gravity into chute proper, also assuring complete drainage when flushing chute with water; glass enamel interior cannot tarnish or stain; right or left-hand door swings (interchangeable); three standard diameters (any length) 18, 24, 36 ins.; attractive quick latching doors.

(2) Lifetime Service—Pfaudler chutes have gained a reputation of being "As Permanent as the Cornerstone" only through actual demonstration in hundreds of cases over a long period of years.

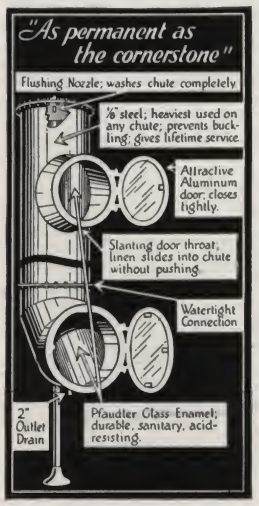
(3) Specifications and Construction Data—The new Pfaudler glass lined laundry chute is made of ⅛-in. open hearth steel in sections of suitable length to meet building requirements. Furnished in three standard diameters:

18 ins. inside, 21 ins. outside; 20 ins. inside, 23 ins. outside; 24 ins. inside, 27 ins. outside (including flanges).

Chute sections to be properly flanged and punched. To be furnished with Pfaudler gaskets for joints, so as to make chute watertight.

Interior of chute to be lined with Pfaudler blue glass enamel, which is to extend well beyond the interior edges of gaskets and to outer edges of door throats and facings. Top cover provided with a ¾-in. nipple connection to flushing nozzle for joining to water service pipe. A 3-in. coupling, iron pipe thread, is provided for connecting a ventilator pipe to the chute.

At a distance of approximately 47 ins. above level of each floor will be an aluminum door finished with a metal priming coat, providing a smooth base for final finish which can be made to match interior of the building and, in this way, carry out the desired color scheme. The final finish would be done by others. This door, which is slightly dished, closes tight against a soft rubber cushion and is secured by a self-latching refrigerator type latch. Throat to which door is attached to be integral with chute proper, and of length to bring its outer edge flush with face of finished wall. All throats are pitched, so that when flushing the chute, the throats will promptly drain to the chute proper. Inside diameter of door is 18 ins. in the 24 and 20-in. size chutes, and 16½ ins. inside diameter on the 18-in. chute. Bottom of chute to be an elbow, closed watertight with aluminum door finished same as service doors. This door secured by two cam type combination clamps and handles. All doors provided with close fitting supporting hinges. All hinges provided with bearing washers for taking up wear. Door and frame assembly for service doors and bottom elbow reversible for either left-hand or right-hand swing, but latch is furnished for either right or left-hand swing of doors as specified.



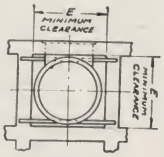


Diagram B

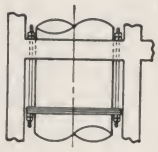


Diagram C

Chute to have 2-in. standard outlet (threaded for drain connection). Drain opening has special strainer to prevent possible clogging of drain pipe. No other fittings furnished for this section. Chute to be supported at bottom by one 2-in. standard steel pipe leg with cast iron base, and by ⅞-in. tie rods at each floor (two or more at each floor as conditions require), connected to angle irons set in steel work of floor construction. If there are any exceptions to the angles at which chute will be served, they should be indicated. Chute is lagged for shipment at the plant and is delivered in sections ready to assemble. It can be installed by any construction engineer, but we recommend the employment of one of our erecting engineers wherever possible.

Chute Prices Reduced—As the result of a new method of fabrication, the new Pfaudler glass lined laundry chute is offered at substantially reduced prices. Consequently, the most sanitary and direct method of disposing of soiled laundry can now be incorporated into plans of hotels, hospitals and similar buildings at a modest figure.

Key to Diagrams

Diagram A—General drawing of chute.

(1) 3-in. coupling for ventilator pipe (no other fittings furnished).

(2) ¾-in. pipe for connection to water service pipe (for spray nozzle).

(3) Aluminum door, fitted with combination clamp and handle.

(4) Standard Pfaudlerite gasket for each joint.

(5) 2-in. standard pipe outlet (threaded for drain connection).

Diagram B—Cross section floor (showing supporting angle irons).

Diagram C—Tie rods.

Note: Floor openings and plumbing connections to be provided by owner.

Steel Dust and Rubbish Chutes

A glass lined or plain steel dust or garbage chute is also manufactured and is constructed along the same principles as the laundry chute. Details will be furnished on request.

Glass Lined Mixing Tanks

A complete line of glass lined mixing, heating, cooling and storage tanks also manufactured. Capacities 2 to 9000 gals. Such equipment includes pasteurizers, transportation tanks, cookers, mixers, percolators, chemical stills, etc.

Complete Details Furnished on Request

For complete information on all products, address THE PFAUDLER CO., 1600 Gas & Electric Building, Rochester, N. Y.

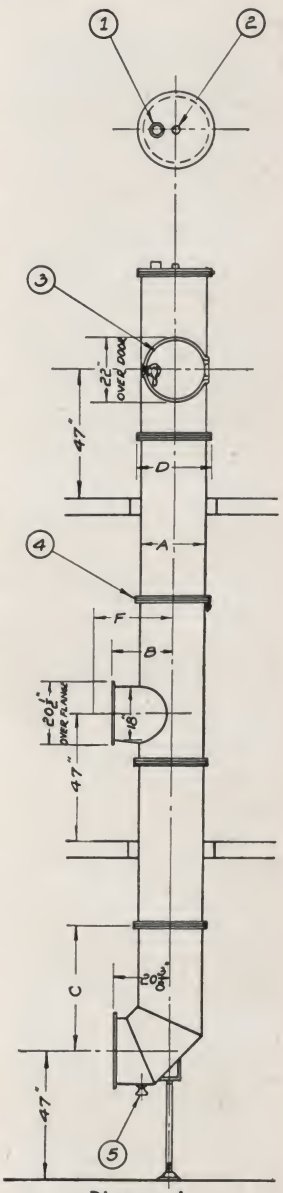


Diagram A

Dimensions, inches

A	18	20	24
B	11 min.	12 min.	14 min.
C	58	58	46
D	21	23	27
E	24	26	30
F	16 min.	17 min.	19 min.

F (projection of handle) = B plus 5 in.

C. M. WILKINSON COMPANY

Sole Manufacturers and Licensee for Wilkinson Chutes

850 Euclid Avenue, CLEVELAND, OHIO

REPRESENTATIVES IN PRINCIPAL CITIES

PRODUCTS

WILKINSON SOILED LINEN or LAUNDRY CHUTES for Hospitals, Hotels, Apartment Hotels, Dormitories, Institutions and Residences.

WILKINSON RUBBISH CHUTES for Hospitals, Hotels, Apartment Hotels, Institutions, Schools, Office Buildings, Department Stores and Residences.

WILKINSON DUST CHUTES for Hospitals, Hotels, Institutions, Schools and Department Stores.

WILKINSON WASTE TOWEL CHUTES for Office, Loft and Mercantile Buildings.

WILKINSON SPIRAL CHUTES for Department Stores, Warehouses, etc.

GENERAL FEATURES



Diagram of Standard Soiled Linen Chute Installation

The thoroughly proven, patented features enumerated below in all Wilkinson Chutes insure compliance with local ordinances governing such devices. Specify Wilkinson Chutes in the General Contract or separately under Building Equipment.

Standardized Design—Combined with years of experience secures the most in convenience, service, durability and low cost.

Homogeneous Metal—Used throughout to eliminate glazed, enamel or painted surfaces which are liable to crack, flake, chip or wear off. *Aluminum* and other metals used are non-corrosive, rustproof, sanitary and have a permanently smooth surface.

Smooth Joints—Of turned, lapped and welded construction eliminates rivets, bolted flanges and gaskets. Trimming, filing or smoothing joints after erection are unnecessary.

Expansion Joints—At each story prevent cracking of walls. Sections are of story height, supported at each floor. No complicated Engineering is required to fit them into any building. Maintenance or repairs are unnecessary.

Foot Operated Hopper Doors—Make access easy. Pressing the foot lever opens the bottom hinged hopper door into which the material is dropped. Shifting the load in the hands, or thrusting it into the opening is avoided. Hopper door quietly self-closes and is out of the way immediately the foot lever is released. No need to stop and push the door closed, and it cannot be left open. No part of the door projects into room or corridor. On Rubbish Chutes two interlocking doors prevent back draft and minimize fire hazard.

Discharge Hopper—Gives generous storage capacity. Impact plate and pedestal prevent bottom of chute from being punctured when heavy objects are thrown into it. Top hinged counterbalanced door, does not obstruct passage way or access when open.

Flushing Ring—Drain and vent in Soiled Linen Chutes provide easy means of keeping them clean and sanitary. Automatic sprinkler and damper in Rubbish Chutes reduce fire hazard.

WILKINSON SOILED LINEN CHUTES—Specifications

(S1) General—Furnish and install, where shown on the plans (state number) *Aluminum Soiled Linen Chute(s)*, Type (See table), of size (see table), as designed and manufactured by C. M. WILKINSON COMPANY, 850 Euclid Ave., Cleveland, Ohio, and as detailed in the following:

(S2) Material—No. 16-gauge *Aluminum* throughout.

(S3) Fabrication—All chute sections and joints made leak proof and smooth without bolted flanges and gaskets, and without rivets. Provide an expansion joint at each story.

(S4) Supports—Each story height of chute to be supported at its respective floor.

(S5) Intakes—Hopper type with foot operated, self closing, bottom hinged hopper door of *Aluminum* with opening (state size, see table). Each intake unit constructed with steel frame, welded joints and sloping extensions of *Aluminum*, assembled complete ready to properly place flush with wall enclosure and fastened to floor. Include formed metal trim of approved finish.

(S5-Alternate) Intakes—Cast *Aluminum* door and frame with round opening (state size, see table). Door to be self-closing on concealed spring hinges, with rubber cushion gasket and chromium plated refrigerator type latch. Each frame and door to be securely fastened to sloping extension welded to chute and made integral with it ready to properly place flush with wall enclosure. Exposed portions to have satin finish.

(S6) Discharge—Bottom of chute to have discharge hopper unit, with welded joints and smooth sloping bottom having full bearing on steel impact plate welded to pedestal extending to floor. Discharge opening to be 4 ft. above floor of size (see table), provided with counterbalanced *Aluminum* door hinged at top with cam lever latches and rubber cushion.

(S6-Alternate) Discharge—Terminate with open end at height of 5 ft. above bottom floor.

(S7) Cleaning—At top of chute provide ¾-in. perforated brass pipe flushing ring formed to inside contour of chute, and 2-in. drain flange in bottom of discharge hopper. Connections to flushing ring and drain installed by others.

(S8) Vent—Over top of chute provide properly fastened *Aluminum* plate having 3-in. flange for vent extension by others.

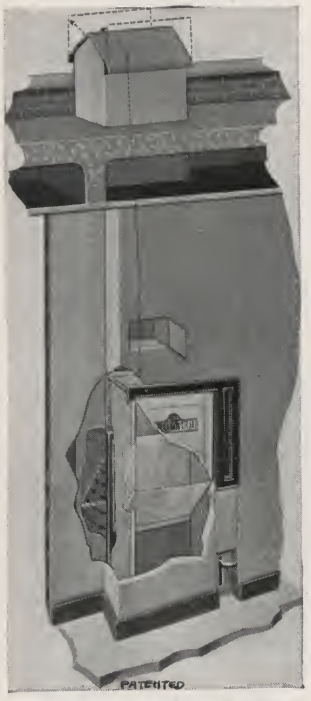


Diagram of Automatic Roof Damper

WILKINSON RUBBISH CHUTES—Specifications

(R1) General—Furnish and install, where shown on the plans, (state number) *Rubbish Chute(s)* Type (see table), of size (see table) as designed and manufactured by C. M. WILKINSON COMPANY, 850 Euclid Avenue, Cleveland, Ohio, and as detailed in the following:

(R2) Material—No. 16-gauge *galvannealed* iron throughout (or No. 16-gauge Armco, No. 16-gauge Toncan, No. 16-gauge Standard) (state which) galvanized iron.

(R3) Fabrication—Same as (S3).

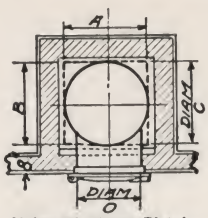
(R4) Supports—Same as (S4).

(R5) Intakes—Hopper Type with foot operated, self closing, bottom hinged outer door of *Aluminum* for opening (state size—see table) automatically interlocked with inner door at chute. Each intake unit constructed with steel frame, welded joints, sloping extensions, assembled complete ready to properly place flush with wall enclosure and fastened to floor. Include formed metal trim of approved finish.

(R6) Discharge Hopper—Same as (S6).

(R7) Roof Damper—Extend chute 3 ft. above roof and terminate with automatic damper doors at top. These doors held shut by chain and fusible link inside chute make access possible through opening with hinged door at proper height above top floor. Suitable copper flashing and counterflashing around chute at roof to be included and installed before roofing is placed.

(R8) Sprinkler—Above discharge hopper provide offset recess in chute into which properly mount a sprinkler head on ¾-in. pipe extended outside chute and from which extension to water system of building is installed by others.



TYPICAL FLOOR PLAN
CHUTES W-2S, W-4S, W-6S

SIZES AND DIMENSIONS OF WILKINSON CHUTES

Chute type for soiled linen	Chute size, in.			Intake size openings, in.			Disc hopper size openings, in.		Chute type for rubbish
	Width A	Depth B	Diam. C	Width M	Depth N	Diam. O	Width X	Height Y	
W-1S	27	27	28	22	18	.....	28	36	W-1R
W-2S	.....	.....	28	.....	.....	24	28	36	.....
W-3S	22½	22½	24	18	18	.....	24	30	W-3R
W-3SC	.....	.....	24	.....	.....	24	24 diam.	.....	.....
W-4S	.....	.....	24	.....	.....	18	24	30	.....
W-4SC	.....	.....	24	.....	.....	18	24 diam.	.....	.....
W-5S	18	18	18 or 20	15	18	.....	18	30	W-5R
W-5SC	.....	.....	18	15	18	.....	18 diam.	.....	.....
W-6S	.....	.....	18 or 20	.....	.....	18	18	30	.....
W-6SC	.....	.....	18	.....	.....	18	18 diam.	.....	.....
W-7S	12	12	12	12	15	.....	24	30	.....
W-8S	11	6	.....	9	12	.....	24	30	.....

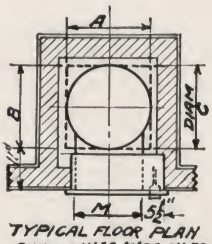
Note: Soiled Linen Chutes—Intakes on Chutes W-1S, W-3S and W-5S have foot operated, *Aluminum* hopper doors, bottom hinged and self closing. (Bulletin 401)—All other Intakes are hand operated (Bulletins 402, 403 and 405)—Intakes with round openings have Cast *Aluminum* frames and doors; side hinged and self closing on concealed spring hinges. (Bulletins 402 and 403).

Rubbish Chutes—Intakes have foot operated, *Aluminum* outer hopper door, interlocked with inner door at chute. (Bulletin 404).

Every Intake plainly marked for use intended.

Floor Openings 3 in. larger than size of chute.

Partitions around chute installed by others after chute is erected.



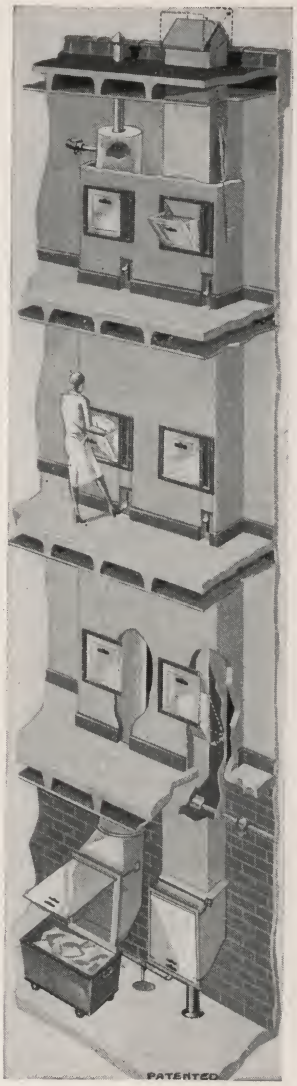
TYPICAL FLOOR PLAN
CHUTES W-1S, W-3S, W-5S.
CHUTES W-1R, W-3R, W-5R.

COMBINED INSTALLATIONS OF SOILED LINEN AND RUBBISH CHUTES

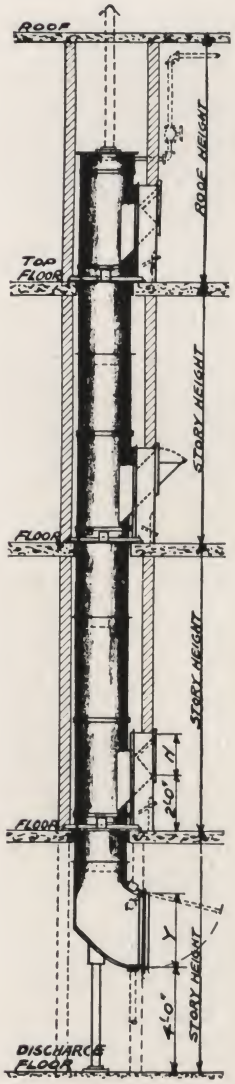
Many progressive architects and building owners for hospitals, hotels, apartment hotels and institutions are finding a decided advantage in the use of two or more chutes installed together, each chute being used individually for its separate purpose to handle either soiled linen, rubbish, paper or debris.

With Wilkinson hopper type intakes, each intake plainly marked for the use intended, a serviceable, efficient and practical combination can be obtained. Their attractive, uniform appearance is evident.

Modern efficiency methods require soiled linen chutes in hospitals and hotels. Equally as important is the need for rubbish chutes. Salvage values of paper, magazines, etc., earn dividends consistently when efficiently collected, sorted and sold. Wilkinson Chutes pay for themselves in three to five years. (See cut at right.)



RESIDENCE AND DOMESTIC SOILED LINEN AND RUBBISH CHUTES



Types W-7S, W-8S, W-7R, W-8R. Built to fit into walls, between studding and floor joists, Wilkinson Residence and Domestic Soiled Linen and Rubbish Chutes are fabricated and shipped in assembled sections ready to set in place. Intake sections have Wilkinson hopper type doors, hand-operated and self-closing, with trim, all of aluminum and assembled as a complete unit.

For Soiled Linen—Chute terminated 1 ft. below basement ceiling and furnished with wood or aluminum (as specified) slatted discharge hopper with top hinged door, built as a unit and arranged to hang from basement ceiling. (See cut below and at right of page.)

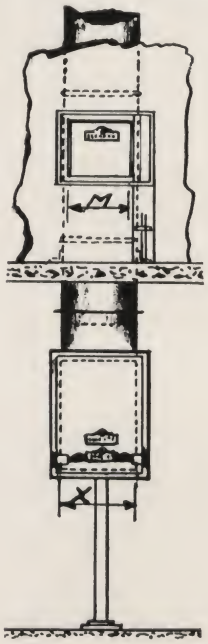
For Rubbish—Chute is extended into adjustable metal hood, fitted over suitable container of 20-gauge galvanized iron, placed on basement floor. Specify Wilkinson Chutes for residence and domestic use under the sheet metal or the carpenter contract. (See cut below and at right of page.)

WASTE TOWEL CHUTES

Office, loft and mercantile buildings having a stack of three or more toilet rooms, one above the other, require the ready disposal of waste paper towels. Wilkinson Waste Towel Chutes save janitor service and prevent unsanitary and mussy conditions. These chutes, of Aluminum, have Intake doors of Aluminum or bronze as specified, top hinged, of the inside swinging type. Sizes and details furnished on request.

SPIRAL CHUTES

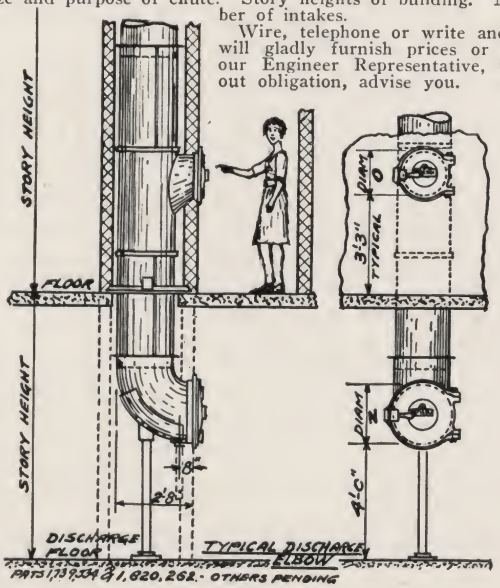
Wilkinson Spiral Chutes embody many improved features outstandingly important in the proper handling of packages, boxes, crates, bags, cartons, etc., in stores, warehouses and industrial plants.

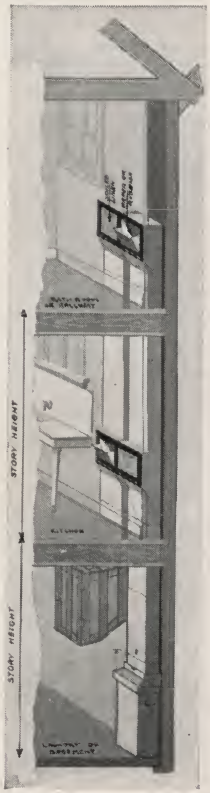


INFORMATION FOR PRICES

When requesting prices on Wilkinson Chutes, tell us: Size and purpose of chute. Story heights of building. Number of intakes.

Wire, telephone or write and we will gladly furnish prices or have our Engineer Representative, without obligation, advise you.





DUPLEX INCINERATOR DIVISION

OF THE CONSOLIDATED IRON-STEEL MFG. CO.

Manufacturers of Duplex Incinerators
1291 East 53rd Street, CLEVELAND, OHIO

The Company

The Consolidated Iron-Steel Manufacturing Company, of which DUPLEX INCINERATOR COMPANY is a Division, is a substantial organization with nearly fifty years of successful manufacturing experience.

The improved features of Duplex Incinerators, which are made complete in our own foundry and shops, have been developed from long, intimate experience with garbage and waste burning equipment. They are sold as a proven product and guaranteed by an institution worthy of confidence.

Engineering Service

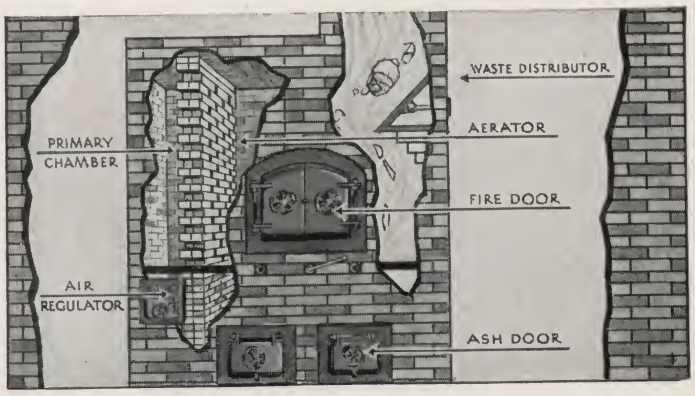
In selecting a Duplex Incinerator, the owner secures the services of a skilled sales engineer who understands the technique of incineration and has been thoroughly trained in the service of this company. This insures an adequate, properly adapted installation, with permanent satisfaction—guaranteed by the name, "Duplex".

In addition to our standardized, chimney-fed incinerators, we also design and furnish special incinerators and destructors. An Engineering Department, trained in this work, is maintained for the benefit of architects and engineers. This service is without obligation, and we welcome the opportunity to consult with you.

DUPLEX INCINERATORS

Description

The Duplex Incinerator is arranged with a brick combustion chamber of highly efficient, though simple, design having a fire brick lining. It is located at the base of a chimney, usually in the basement of the building. Into this chamber are built grate rests with full dumping grates, wall bearings, stops, waste distributor, access doors, draft regulator and miscellaneous supporting iron.



Chimney starts on top of the incinerator and extends straight up through the building, usually in the kitchen wall or convenient to corridor or rear porch. Service or receiving hopper doors, readily accessible, are built into chimney wall at the most convenient point on the floor or floors above.

All metal parts are furnished by us with ¾-in. scale installation detail drawings for the guidance of the mason in setting the parts.

Operation

Duplex Incinerator performs a triple function in the disposal of waste in that it—(a) provides sanitary concealed storage for waste until it is dried, ready to be burned; (b) provides fuelless, odorless burning, and (c) provides storage for the ashes, flame-sterilized tin cans, broken glass and crockery for timely removal.

Garbage, waste paper, broken boxes of wood and paper, wilted flowers, discarded newspapers, sweepings, and all the other miscellaneous waste is deposited in the receiving doors, right at hand on upper floors of buildings, where it falls to the incinerator chamber.

As it falls it strikes the waste distributor, which scatters the material over the grates, preventing the packing which would interfere with drying and combustion. Then follows the drying out process by means of the chimney draft and the aerator lattice.

When lighted, the waste paper, broken wood and other readily combustible matter contributes a hot fire which completes the drying and consumes the contents of the incinerator chamber, as garbage is then readily combustible.

Principles of Construction

The Aerator Lattice—Air is drawn by the chimney through the draft regulator into the primary chamber and is distributed by the aerator lattice which extends the full width and height of the incinerator. This current of air passes through and over *all* the garbage and other waste in the main incinerator chamber. *Between burnings,* this greater air circulation prepares the waste for burning by evaporation of moisture.

During burning, the incoming air is heated by the hot fire brick in the aerator lattice which is in contact with the fire, and that feeds a perfectly distributed supply of preheated oxygen to maintain combustion *on top* of the waste accumulation. Odorous gases released by the heat approaching waste below must pass through the fire and be sterilized or consumed.

Draft regulator provides separate control of up-draft through horizontal grates, and top draft through Aerator, to obtain controlled burning and maximum results under all conditions.

The Waste Distributor—The efficient, fuelless incineration accomplished in Duplex Incinerators is the result of positive aeration of all waste secured as follows:

First—by air distribution the entire height and width of the incinerator. Second—by placing air intake and distribution on side opposite chimney so that air current acts on *all* the waste. These two results are accomplished by the Duplex Aerator Lattice in a highly satisfactory manner.

Third—by avoiding the compression of the accumulation of waste due to the impact of its fall from upper floors of the building. Fourth—by shifting the waste in a loose pile toward the point of incoming air to insure its contact with the drying air current. The latter two results are secured by the unbreakable heavy iron waste distributor which prevents packing and shifts waste into a loose pile to dry.

These functions, with consequent complete aeration of waste, set a new standard of performance in fuelless, chimney-fed incinerators.

Standard Models

Duplex Incinerators are manufactured in a wide range of standard models designed to meet specific requirements. The table below will guide the reader to the type which will meet his needs and we will be glad to furnish additional data regarding any model upon request. We also manufacture outdoor incinerators, direct charged basement incinerators and high temperature incinerators or destructors for large installations in hotels, hospitals, laboratories, etc.

STANDARD MODELS

Model	Residences, number of rooms	Apartments, number of rooms	Schools, number of students	Hospitals, number of beds	Stores, number in average group
S	Not over 10				
B	10—14	Under 18			
D	Very large	18— 40			
L		40— 80	Under 300	50	1— 6
T		80—120	300— 500	50— 90	6— 8
N		120—160	500— 700	90—120	8—10
F		160—240	700—1000	120—180	10—15
K		240 —320	1000 —1200	180—260	15—18

Architect's Specifications

The contractor shall furnish all metal parts, fire brick, masonry materials and labor, to install complete where shown on plans—( ) Model ( ) Duplex Incinerator, having ( ) No. ( ) Receiving Doors.

Incinerator (s) to be installed according to the detail plans and specifications of DUPLEX INCINERATOR COMPANY, 1291 East 53rd Street, Cleveland, Ohio.

KAHN PRODUCTS COMPANY

Manufacturers of Kahn Incinerators

2214 West Columbia Avenue
PHILADELPHIA, PA.

REPRESENTATIVES IN PRINCIPAL CITIES

Products

KAHN INCINERATORS WITH VENTIDUCT.

Also KAHN Standard Up-draft Incinerators; KAHN Outdoor or Field Type Incinerators, and KAHN Wet Garbage Incinerators, offering quick, clean, sanitary and faultless disposition of all garbage, rubbish and waste. There is a type to meet every requirement.

Kahn Incinerators

Economical and Fireproof—KAHN Incinerators offer maximum incineration at minimum cost. They are easy and inexpensive to install. Artificial fuel such as gas, oil or coal is unnecessary. KAHN Incinerators are absolutely fireproof—sparks and smoke will not emanate from receiving doors. They are scientifically sanitary—poisonous gases and unpleasant odors are consumed.

Parts—All KAHN Incinerator parts are of extra heavy, clean, gray cast iron, carefully fitted and machined. No steel is used in KAHN construction that will come in contact with intense heat—steel members eventually warp, buckle and burn out when under constant, high incinerating temperatures.

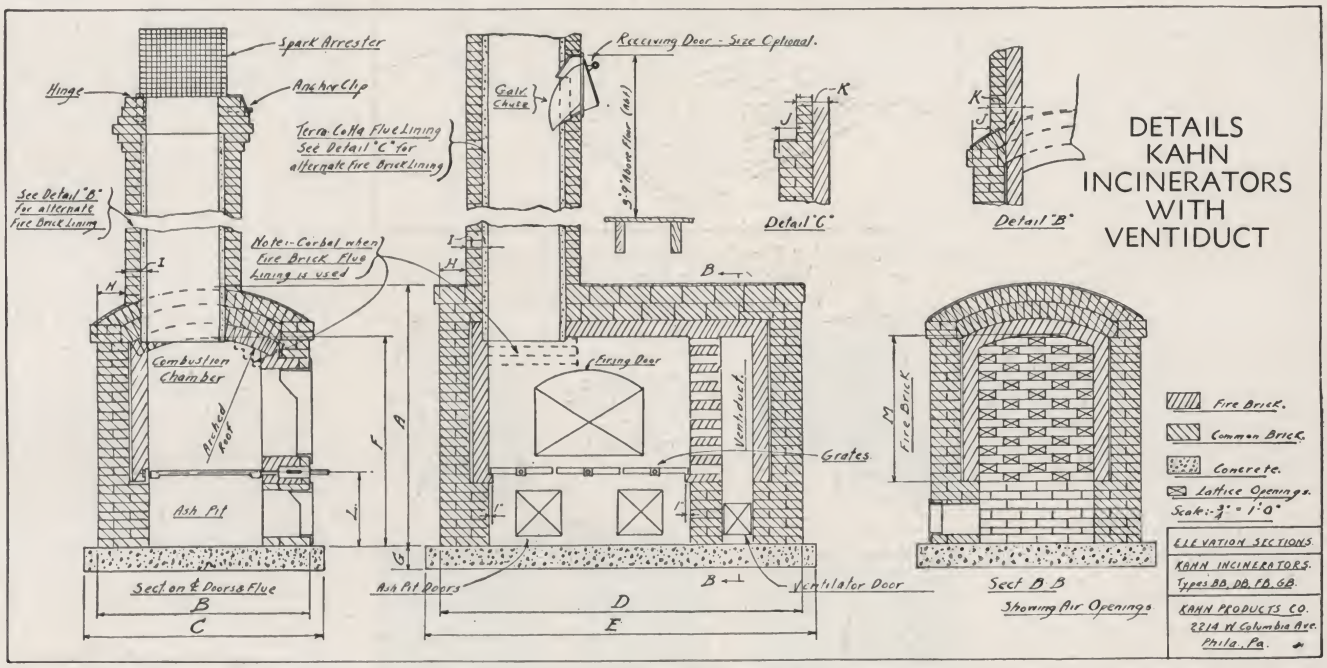
Receiving Doors—KAHN Receiving Doors combine a distinctive appearance with permanence. They are made of heavy cast iron, finished in a lustrous heat and tarnishproof metallic coating. They are of an improved design, working on a concealed bar hinge. KAHN Doors are furnished in the following net hopper throat opening sizes:

No. 1— 8x10 in.—for residences; small apartments.
No. 2—10x12 in.—for large apartment buildings.
No. 3—12x14 in.—for schools; hospitals, etc.
No. 4—17x21 in.—for warehouses; factories.
Note: Receiving doors can be fitted with silent closers for hospital use, if desired.

Guaranteed—Every KAHN Incinerator sold during the past nine years has been backed by our absolute guarantee. We have yet to receive serious complaint regarding faulty parts or ineffective incineration.

What Type Kahn You Will Require

Type BB—Residences; duplex dwellings; apartment buildings with less than 6 suites.
Type DB—Apartment buildings with 6 to 30 suites; hospitals, less than 50 beds; schools, less than 275 students.
Type FB—Apartment buildings with 40 to 84 suites; hospitals, 60 to 150 beds; schools, 300 to 1000 students.
Type GB—Apartment buildings with 85 to 110 suites; hospitals, 160 to 300 beds; schools, 1100 to 1600 students.
Note: For further uses, details and specifications of the complete line of KAHN Incinerators, please consult us or our local representative.



Type	*Flue, min., in.	Capacity	Grate area, sq. ft.	Dimensions in inches as per the above diagram												Standard equipment										Mason Materials required exclusive of flues		
				A	B	C	D	E	F	G	H	I	J	K	L	M	Receiving doors	Grates, number and size, in.	Doors, in.			Shaker handles	Bearings		Shanks	Galv. wire screens, in.	Common brick	Fire brick	Side wedge arch fire brick
																			Firing	Cleanout	Ventilating		Front	Rear				
BB	12x12	5 bu. or 100 lb. per hr.	4.22	61	50	58	50	58	51½	6	3¼	5¾	0	9	20⅜	36¼	The quantity and size of receiving doors will vary with the type and size of building to be equipped. Note opening sizes given above.	1—18x31	16x16	12x12	8x8	1	1	1	1	16x16x20	760	300	85
DB	16x16	10 bu. or 225 lb. per hr.	8.35	61	50	58	68½	76½	51½	6	3¼	5¾	0	9	20⅜	36¼		2—18x31	16x16	12x12	8x8	1	2	2	2	24x24x20	900	420	112
FB	20x20	18 bu. or 370 lb. per hr.	12.4	73	59	67	100½	108½	59	6	7¾	5¾	4½	9	20⅜	43¾		3—18x31	24x30	2—12x12	8x8	2	3	3	3	24x24x20	2550	640	140
GB	22x22	25 bu. or 500 lb. per hr.	16.5	78	59	67	119	127	64	6	7¾	5¾	4½	9	23⅜	43¾		4—18x31	24x30	2—16x16	8x8	2	4	4	4	24x24x20	3000	80	290

*Flues can be erected over the combustion chamber, to the left or right, front or rear, or in the center to suit any layout.

EQUAL-AIRE INCINERATOR

DIVISION OF
SARGENT BUILDING SPECIALTIES CO.
16 Warren Street, NEW YORK, N. Y.
SALES REPRESENTATIVES IN PRINCIPAL CITIES

The Principle of "Equal-Aire"

If incineration is to be complete, economical and odorless, certain fundamental laws of combustion must be observed. The design of the Sargent Equal-Aire Incinerator provides equal distribution of air in the combustion chamber. This accounts for its uniformly successful performance. In terms of incineration, it means utmost waste destruction in the shortest time with maximum consumption of liberated gases.

Equal distribution of air is attained by means of two air controls in the front or side of the incinerator which supply oxygen through a duct between two walls to a series of air ports in the firebrick wall. By distributing these ports over the entire wall surface, a constant flow of air on all sides of the mass is assured, resulting in more complete dehydration preparatory to burning. Top burning, which is essential to the elimination of obnoxious odors, is effected by the feeding of pre-heated air through the ports. Besides furnishing air in correct proportions to all parts of the incinerator, a steady circulation is created, thereby insulating the outer walls, which reduces the possibility of heat cracks much more effectively than a dead air space, as used in ordinary incinerators. This method of laying up the walls requires a minimum of firebrick, lending economy to its construction.

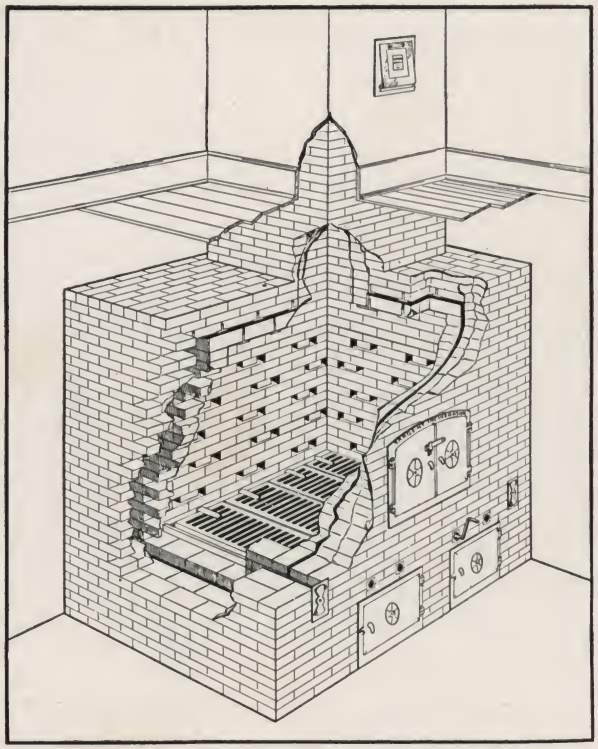
Hopper Door

Appearance, durability and mechanical perfection have been successfully combined in the Sargent Hopper Door. Made of solid cast aluminum, highly polished and with recessed panel, it will not lose its attractive appearance.

An ingenious checking device which is standard equipment automatically closes the door and prevents slamming, which has been a source of annoyance in the old-fashioned type. Another important feature is an air compartment between the door and chute which insulates against excessive heat.

The Hopper Buck is of heavy cast iron eliminating the possibility of distortion and assuring a perfect fit when hopper door is attached to buck.

After years of experience, 11x12¼ ins.—(size of opening)—has been found the most suitable, for general use.



Sectional Drawing Showing "Equal-Aire" Principle of Air Distribution Through Ports in Walls Resulting in Thorough Drying and Complete Combustion



Patents pending

Combustion Chamber Parts

Grate Assembly—All parts of the grate assembly including the grate frame are made of the finest grade high-silicon grey iron, producing clean, tough castings; much more heat-resistant than steel. Grates are specially designed to eliminate distortion under normal conditions, allow ample passage for air and are easy dumping. Grate frames consist of a series of interlocked units, interchangeable, which can be renewed without disturbing the masonry.

Doors—Heavy cast iron double leaf firing door size 26x20 ins. with perforated cast iron liner to prevent warping is standard equipment on models 24 to 26 and 33 to 36.

Smaller models are equipped with single leaf cast iron firing door, size 16x13 ins.

Ash doors and firing doors are all equipped to secure positive anchorage into masonry.

Air Intake Control—Air intake controls permit the feeding of air to the top of the fire without opening ash doors and creating excessive draft. When not burning these controls are left open, assisting the drying process.

Spark Arrestor—A heavy galvanized wire mesh spark arrestor is furnished to cap the flue, thereby preventing the escape of flying sparks or burning embers.

Specifications

Architects may specify the Sargent Incinerator with confidence of complete client-satisfaction. The policy of the Company has always been to build its products as near to perfection as possible, and quality of workmanship or materials will never be sacrificed to lower production costs. Recommendations as to capacity will be found conservative.

The following insert is suggested under the masonry specification:

"Install where shown on plans, Sargent Incinerator (s) Model (.....) with 'Equal-Aire' distribution and control. Hopper Doors to be built in flue on each floor above the basement. All grates, firing doors, ash doors, air controls, hopper doors, and other metal parts necessary for completion and all brickwork are to be furnished by this contractor. Materials to be the best of their respective kind. All work is to be completed in a neat and workmanlike manner and in accordance with detail drawings and specifications of the manufacturers, SARGENT BUILDING SPECIALTIES CO., 16 Warren Street, New York, N. Y."

STANDARD LAYOUTS AND CAPACITIES

GENERAL DATA

COMMON BRICK

SCALE ¼" = 1' 0"

FIRE BRICK

Concrete Footings

Should extend 6 ins. beyond outside of incinerator on all sides, level with finished basement floor.

Flues

Serving models 22, 23 and 32 should be lined with standard fire-clay flue lining. For larger models 4½-in. fire-brick lining to a point 30 ft. above top of incinerator, 8-in. common brick above. All flues must project at least 6 ft. 0 in. above any surrounding wind obstructions. Where hopper doors are installed, flues must be plumb to top, without slope or offset.

Flue may be located in any corner of incinerator.

Incinerating Chamber Construction

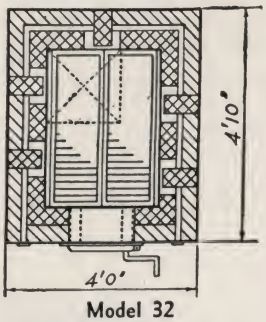
Walls and roof to be constructed of high grade common brick, and 4½-in. fire-brick lining, with air duct between as shown. Fire-brick must be laid with tight joints in fire-clay, dipped, not buttered.

Roof of Incinerating Chamber

Steel for supporting roof of incinerating chamber is to be set as shown on installation detail furnished with every incinerator.

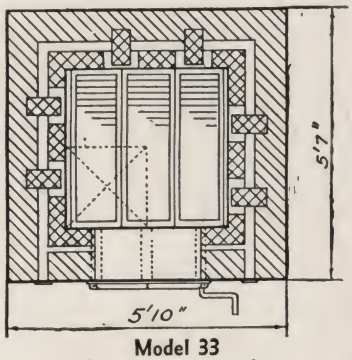
Doors

Double leaf doors are indicated in plan by dividing line at center. Other doors are single.



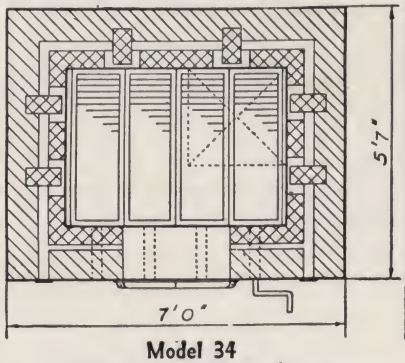
Model 32

Grate area 7½ sq. ft.
Apartments—40 rooms, not over 18 suites.
Hospitals—Under 40 beds.
Schools—Under 250 students.
Flue—16x16 ins., over two stories, 20x20 ins.
Incinerating Chamber Height—6 ft. 6 ins. to 7 ft. 2 ins.



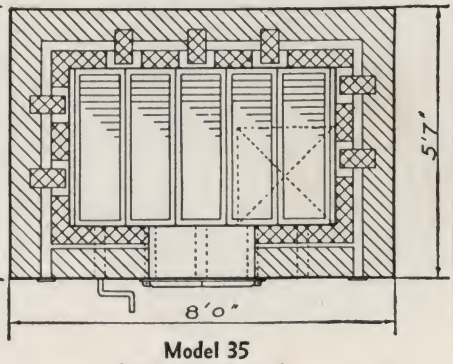
Model 33

Grate area 11 sq. ft.
Apartments—110 rooms, not over 40 suites.
Hospitals—40-80 beds.
Schools—250-500 students.
Flue—20x20 ins., over six stories 24x24 ins.
Incinerating Chamber Height—7 ft. 2 ins. to 8 ft. 0 in.



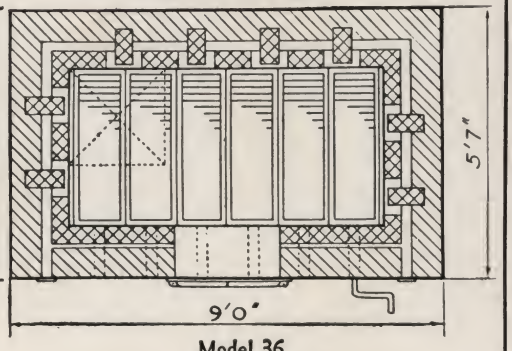
Model 34

Grate area 14½ sq. ft.
Apartments—180 rooms, not over 80 suites.
Hospitals—80-120 beds.
Schools—500-700 students.
Flue—20x20 ins., over six stories 24x24 ins.
Incinerating Chamber Height—7 ft. 2 ins. to 8 ft. 0 in.



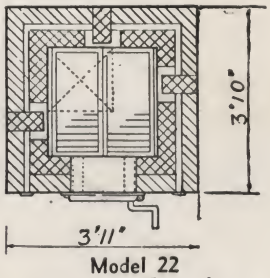
Model 35

Grate area 18 sq. ft.
Apartments—230 rooms, not over 100 suites.
Hospitals—120-200 beds.
Schools—700-1000 students.
Flue—20x20 ins., over six stories 24x24 ins.
Incinerating Chamber Height—7 ft. 2 ins. to 8 ft. 0 in.



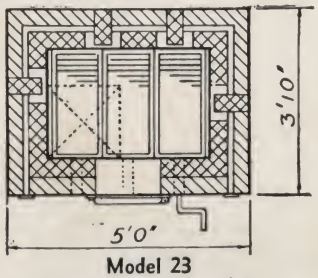
Model 36

Grate area 21 sq. ft.
Apartments—280 rooms, not over 125 suites.
Hospitals—200-275 beds.
Schools—1000-1250 students.
Flue—20x20 ins., over six stories 24x24 ins.
Incinerating Chamber Height—7 ft. 2 ins. to 8 ft. 0 in.



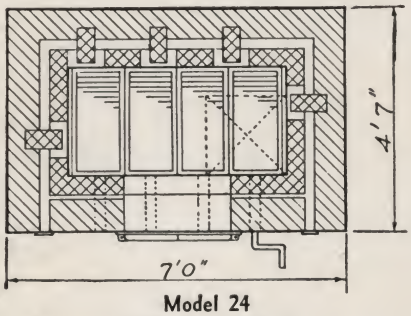
Model 22

Grate area 5 sq. ft.
Residences—Up to 15 rooms.
Apartments—18 rooms, not over 3 suites.
Flue—12x12 ins., if more than one hopper, 16x16 ins.
Incinerating Chamber Height—6 ft. 6 ins. to 7 ft. 2 ins.



Model 23

Grate area 7½ sq. ft.
Apartments—40 rooms, not over 18 suites.
Hospitals—Under 40 beds.
Schools—Under 250 students.
Flue—16x16 ins., over 2 stories 20x20 ins.
Incinerating Chamber Height—6 ft. 6 ins. to 7 ft. 2 ins.



Model 24

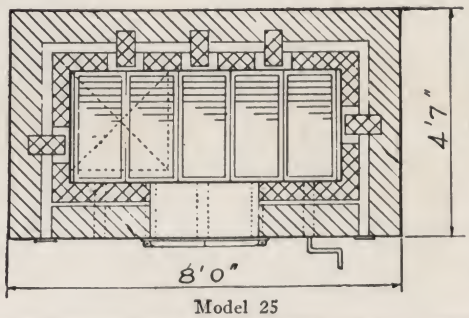
Grate area 10 sq. ft.
Apartments—90 rooms, not over 36 suites.
Hospitals—40-70 beds.
Schools—250-400 students.
Flue—20x20 ins., over six stories 24x24 ins.
Incinerating Chamber Height—7 ft. 2 ins. to 8 ft. 0 in.

Model 25

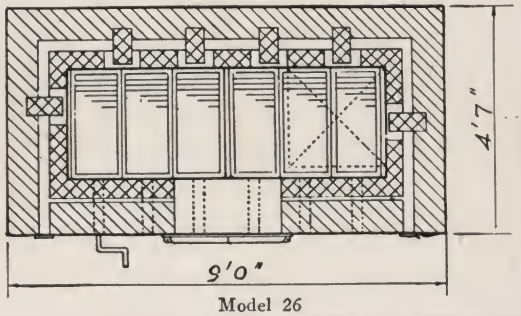
Grate area 12½ sq. ft.
Apartments—150 rooms, not over 70 suites.
Hospitals—70-90 beds.
Schools—400-500 students.
Flue—20x20 ins., over six stories 24x24 ins.
Incinerating Chamber Height—7 ft. 2 ins. to 8 ft. 0 in.

Model 26

Grate area 14½ sq. ft.
Apartments—180 rooms, not over 85 suites.
Hospitals—90-120 beds.
Schools—500-700 students.
Flue—20x20 ins., over six stories 24x24 ins.
Incinerating Chamber Height—7 ft. 2 ins. to 8 ft. 0 in.



Model 25



Model 26

KERNER INCINERATOR COMPANY

3551 North Richards Street
MILWAUKEE, WIS.

BRANCH OFFICES AND AGENCIES IN 150 CITIES

Products

Incineration equipment for all types of Residences, Apartments, Hospitals, Schools, Commercial Buildings and Industrial Plants.

Flue-fed Kernerator—With flue either inside or outside of building; hopper doors on each floor, conveniently located.

Basement-fed Kernerator—Built where it is impossible to use a flue of proper size to serve as fallway.

A-1 Kernerator—Steel encased unit, complete and self-contained. Built into niche in masonry under flue; gas used as auxiliary fuel; flue-fed or basement-fed.

Heavy Duty Type Kernerator—Flue-fed or basement type; installed where there is a large amount of highly combustible material.

Estate (Down-Draft) Type Kernerator—Separate grates for rubbish and fire brick hearth for wet material —secondary combustion and settling chamber.

The Company

The KERNER INCINERATOR COMPANY, which originated flue-fed incineration, has devoted eighteen years exclusively to the science of incineration. During this period, tens of thousands of installations have been made which are today in successful operation. This history gives adequate assurance that the Company is equipped to meet satisfactorily, the most exacting incineration requirements.

Draft Control

In buildings of six stories and over, the excess draft developed in the Kernerator flue is apt to cause the emission of papers and fly-ash. This can be eliminated by the installation of the Kernerator System of Draft Control, consisting of an airtight incinerator room (in the basement) and settling chamber above the highest hopper door. A damper which automatically closes off the flue when the fire door is opened is an additional feature which insures elimination of fly-ash. These features are not standard equipment, and special provision must be made for them in the specifications if they are to be included.

These are original Kerner developments, and are available only to Kernerator users.



Model T

The Model T here illustrated makes available for the first time to the builder of a low priced dwelling, a flue-fed incinerator of the highest quality. The completed installation, including masonry, costs less than $80.00



S-5 Door

The dimensions of this door are shown on the table of hopper doors at the right. This door is completely silent in operation and is self-closing

Incinerator Specifications

A. General—The incinerator system shall be *Kernerator* as manufactured by the KERNER INCINERATOR COMPANY, Milwaukee, Wis.

B. Work Included—The work included under this heading is the furnishing of all materials and labor for the complete installation of *(state number)* Model*(s) (see table on opposite page)* Kernerator*(s)* with *(state number)* hopper doors, style number *(see table Hopper Door Sizes below).*

C. Installation—To be in strict accordance with the detailed working drawings and specifications furnished by the KERNER INCINERATOR COMPANY.

HOPPER DOOR SIZES

Style No.	Over-all dimensions to edge of casing, inches	Hopper door opening, inches	Over-all width wall frame, inches	Minimum flue size inside dimensions, inches
001	10 x14	7 x 8	9	12x12
003	11¼x14¼	8¼x 8¼	10	16x16 (1 story 12x12)
N-3	10½x11¼	8½x 8	9	Same as 003
N-5	14½x15½	12 x11	12½	20x20 (6 stories 24x24)
005	15 x19	11¼x12	13½	Same as N-5
S-5	16¼x18¾	11½x11¾	12½	Same as N-5
1A3	18 x18	14½x11½	16½	24x24

FIRE AND ASH DOOR SIZES

Description	Standard on models	Clear opening, inches
T (fire and ash door)...	T	13¾x 9½
1D1 (fire and ash door)	R, C and F	17 x10
Single leaf (fire door)...	G, O and L	22 x18
Double leaf (fire door)..	M and P	30 x22
Double leaf (ash door)..	L. M and P	30 x16

Construction Details

Footings for incinerators should extend 6 in. beyond the outer edges of the incinerator walls.

In Models "T," "C," "F," "G" and "O," the combustion chamber is built with a 9-in. wall, the inside portion of which is built of firebrick from three courses below the grate level up to and including the inner course of the top.

Model "R" does not require firebrick lining—only a first-grade hard burnt common clay brick is needed.

In Models "L," "M" and "P" the combustion chamber is built with 14-in. walls made up of 4½ ins. of firebrick on the inside, 8 ins. of common brick on the outside, and with 1½-in. air space between. Method of bonding is shown in construction details. Firebrick shall be laid in fire clay, joints dipped and not buttered.

Outside face of the incinerator chamber walls must not be plastered.

Where an outside basement wall forms a side of the incinerator chamber, provision should be made for preventing any possible seepage into the incinerator.

Flue Construction

Note: Under no circumstances can oil or gas burning heating plants, or fireplace flues, be connected in any way to the Kernerator flue.

Flues measuring 16x16 ins. or less shall be enclosed by common brickwork 3¾ ins. thick and shall be lined with standard fire clay flue lining.

Flues larger than 16x16 ins. shall be enclosed by common brickwork 3¾ ins. thick with a lining of 4½ ins. of firebrick for a distance of not less than 30 ft. above the roof of the combustion chamber; beyond this point, flue enclosing walls shall consist of common brickwork not less than 8 ins. thick.

All flues must continue up straight from the combustion chambers to the topmost hopper door, without offsets or slopes of any kind, and shall be finished smooth on the inside.

The chimney top must extend high enough above any roof obstructions to avoid interference with draft. On flat roof buildings, the chimney should clear roof of the building by at least 10 ft. and should clear all obstructions on the roof within 10 ft. of the chimney, by at least 4 ft.

On residences, or other sloping roof construction, the top of the chimney should extend at least 2 ft. above the highest ridge of the roof.

Special Note

With plastered basements and weatherstripped basement windows and doors, consideration must be given to the admission of the 2000 cu. ft. of air required for each gallon of oil consumed by an oil burning heating plant.

Provision must be made for the introduction of this volume of air by means other than down through the Kernerator flue. The use of the Kernerator flue in this manner will cause a down-draft and interfere with the successful operation of the Kernerator.

TABLE OF SIZES AND CAPACITIES

Model	Capacities	Dimensions, combustion chambers	Brick required		Minimum flue sizes
			Fire	Common	
R	For residences of not more than 6 rooms.	3′ 5″x2′ 11″ 5′ 11″ high	None	930	16x16″ if additional hopper door is used on second floor. Otherwise 12x12″.
A-1	For residences of not more than 6 rooms (gas required).	Steel shell 18¼x18¼″ 40¼″ high	None	170 (around shell)	8x8″ if basement fed. 12x12″ if hopper is used on first floor.
T	For residences of not more than 8 rooms (gas optional).	2′ 11″x2′ 11″ 6′ 1″ high	175	525	Same as for Model R.
C	For residences of not more than 10 rooms.	4′ 5″x3′ 8″ 6′ 2″ high	360	980	Same as for Model R.
F	For residences of not more than 12 rooms. For duplexes or two-family buildings. For up to 16 efficiency (kitchenette) apartments and other apartments containing not over 32 rooms in all.	5′ 4″x3′ 8″ 6′ 2″ high	425	1065	16x16″ flue except in residences with only one receiving door on first floor, where a 12x12″ flue may be used
G	Up to 24 efficiency (kitchenette) apartments. Other apartments containing not over 50 rooms in all.	5′ 4″x4′ 1½″ 6′ 2″ high	455	1080	20x20″—4 stories or higher—16x16″ less than 4 stories in height.
O	Up to 36 efficiency (kitchenette) apartments. Other apartments containing not over 90 rooms. Hospitals up to 35 beds. Schools, up to 500 pupils.	5′ 4″x4′ 6″ 6′ 2″ high	485	1150	Same as for Model G.
L	Up to 60 efficiency (kitchenette) apartments. Other apartment buildings containing not over 130 rooms. Hospitals with from 35 to 60 beds. Schools with from 500 to 800 pupils.	7′ 3″x4′ 11½″ 7′ 7″ high	650	2144	24x24″ for buildings 7 or more stories high. 20x20″ for buildings less than 7 stories in height.
M	Up to 80 efficiency (kitchenette) apartments. Other apartment buildings containing not over 170 rooms. Hospitals with from 60 to 80 beds. Schools with from 800 to 1,000 pupils.	7′ 3″x5′ 4″ 7′ 7″ high	695	2750	Same as for Model L.
P	Up to 150 efficiency (kitchenette) apartments. Other apartment buildings containing not over 300 rooms. Hospitals with from 80 to 125 beds. Schools with from 1,000 to 1,500 pupils.	9′ 1″x5′ 4″ 7′ 7″ high	880	3200	Same as for Model L.

KELLOGG MANN CORP.

Manufacturers of K-M Incinerators

33-37 Franklin Street, BUFFALO, N. Y.

DISTRIBUTORS EVERYWHERE

A SIMPLE, STURDY, EXCEPTIONALLY EFFICIENT INCINERATOR FOR RESIDENCES, APARTMENTS, HOSPITALS, SCHOOLS, BUSINESS BUILDINGS, ETC.

Products

The K-M INCINERATOR, Chimney-fed, Basement-fed and Outdoor types, are made in seven standard models and special designs to meet individual requirements.

General Description

The satisfactory operation of an incinerator depends upon two things—(1) the rapidity and thoroughness with which damp refuse dries out; (2) speedy complete combustion. Both are dependent upon adequate draft.

With this in mind, K-M Engineers designed the combustion chamber, into which the refuse is fed, like a blast furnace which insures maximum draft at all times. The simple patented suspended basket arrangement of the grates utilizes this draft to the fullest—causing speedy drying, complete burning and arrangement for easy ash removal. The result is simple, efficient, odorless, trouble-free service, without the need of auxiliary fuel.

Features and Advantages

(1) Patented Suspended Basket Type of Construction—A system of vertical grates entirely surrounding the combustion chamber excepting the space occupied by the clean-out doors, gives a "suspended basket" type of construction. A two-inch space between the vertical grates and side walls prevents wet garbage from piling up against the brick wall, sticking fast to it and eliminates obnoxious odors from the decaying mass. This air space enables the entire mass to burn on all four sides as well as on the top.

(2) Quick Drying—The K-M is designed to create a maximum draft to produce greatest possible evaporation and quick drying between burnings. One course of fire brick is brought out to meet border of grates in order to force the air to come through ash pit and up through damp garbage spread on horizontal grates. The side grates, suspended away from fire wall, circulates the air on all four sides insuring thorough drying of wet garbage.

(3) Speedy and Complete Combustion—Air is forced up through refuse on grates and circulates on all four sides and top. This enables the entire mass to be enveloped in flame. The blast furnace designed top of combustion chamber builds up a powerful draft. Gases and odors liberated from garbage beneath pass up through flames and are consumed. Complete combustion results.

(4) No Dumping—Clean Ash Pit—The stationary, yet removable horizontal grates eliminates dumping and avoids the possibility of the ash pit filling up with unburned refuse which shuts off the draft so essential to the drying process. No garbage remains in the ashes.

(5) Grates Won't Warp, Clog or Crack—Since the grates are of the non-dumping, stationary type, they never give trouble by clogging or warping. Hot ashes cannot be dumped to come up against the grates and burn them out if ash pit is full.

(6) Nothing to Get Out of Order—Simple, sturdy construction. No bearing blocks, nuts, bolts, shakers, handles; no moving parts, no mechanism to get out of order or interfere with continuous operation.

(7) Easy to Remove Ashes and Unburnables—The fire door is set flush with horizontal grates, not above them, as in many machines. The unburnables are then raked into a receptacle.

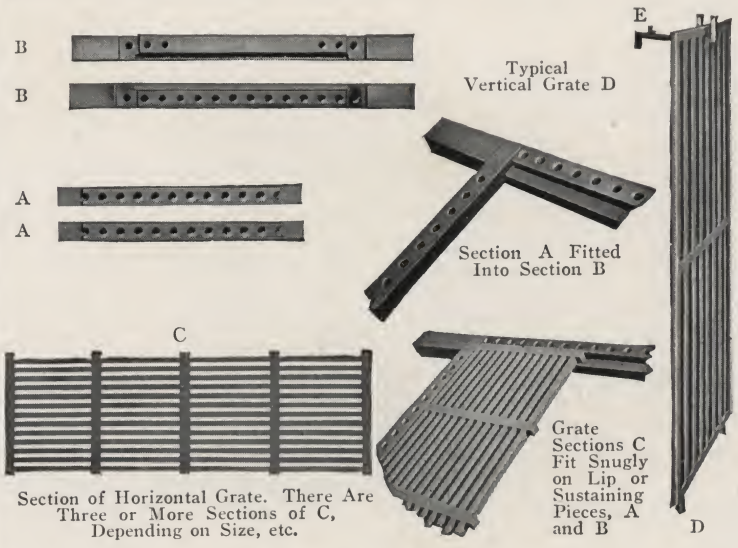
Assures much easier cleaning of grates and substantial labor saving.

(8) All Parts Easily Removable—To remove the vertical grates it is only necessary to lift them from the sustaining hooks which support them—the horizontal grates are easily lifted from their sustaining pieces. It is just as simple to replace them.

(9) The Corbelled-in Roof Construction—Is the most efficient type construction known for giving maximum draft and intensifying heat on the mass to be consumed.

These Parts Are Designed Properly and Made Sturdily

The parts below are shown too small to show their strength and finish. They are designed to withstand terrific heat, without sagging or cracking; and are made of a very high quality, low phosphor, low sulphur metal, the best kind for this purpose known. Its finish is fine grained and hard to break, due to the lack of weakness in its structure.



Both ends of the two sustaining pieces, B-B, are embedded in the brick firewalls. The ends of the other two sustaining pieces A-A, interlock into B-B, forming a square support for the flat horizontal grates C. This forms the bottom and also serves as a guide for the vertical grates D which are suspended on supports E, which are embedded in the masonry, holding the vertical grates 2 in. away from the side walls.

(10) Less Floor Space Is Required—Due to its design which is especially developed for efficient garbage and refuse disposal.

(11) Low Installation Cost—Because of its design, fewer bricks are required and less masonry work is necessary. Both of which reduce construction costs.

Service to Architects

The installation of an incinerator is a specialized subject. In order to assist the architect in selecting it to insure maximum efficiency and satisfaction, the Kellogg Mann Engineering Department will gladly study preliminary sketches and plans and recommend the correct flue size and type of incinerator and prepare specifications to insure proper installation. Supervision of the work itself is provided for through the K-M field staff and distributing organization. There is, of course, no charge for this service.

DIMENSIONS AND CAPACITIES OF 7 STANDARD "K-M" INCINERATORS

Series model	Capacity	Outside dimens., ins. L.	W.	H.	Grate area, sq. ins.	Flue size, sq. ins.
SR	Residences of not more than 6 rooms.	38	38	67½	289	*12x12
R	Residences of not more than 10 rooms; 8 1-room or 5 2-room apartments.	48	48	80½	729	*12x12
LR	Residences of not more than 14 rooms; 16 1-bedroom or 11 2-bedrooms.	53	53	91	1024	16x16
SA	Apartments up to a total of 50 rooms; 25 1-bedroom or 16 2-bedrooms.	48	60	91	1053	18x18
A	Apartments up to a total of 90 rooms; 38 1-bedroom or 30 2-bedrooms.	68	68	96	1521	20x20
LA	Apartments up to 160 rooms, 80 1-bedroom or 53 2-bedrooms.	68	80	106½	1989	22x22
H	Larger apartments, hotels, hospitals, etc., up to 200 1-bedroom apartments.	80	80	106½	2601	24x24

*On SR and R, if two or more hopper doors are used, flue must be 16x16 in.

Typical Specifications

(To Be Included Under Masonry)

The contractor shall furnish and install a K-M Incinerator as manufactured by KELLOGG MANN CORP., Buffalo, N. Y. It shall be installed in the basement with receiving door(s) located in the flue point(s) shown on the plans in accordance with the instructions and detailed drawings furnished by the manufacturer. Spark screen as furnished by the manufacturer shall be installed at the top of the flue.



Aluminum Receiving Door

Typical Receiving and Clean Out Doors

The Receiving Doors are well constructed and have specially designed air-cooled handles, and are available in a smooth grained cast iron, or aluminum, which is highly polished and can be had with any of three raced decorative designs on their surface. These designs will contribute to the beauty of any kitchen.



Single Leaf Clean Out Door (Open)



Double Leaf Clean Out Door (Closed)

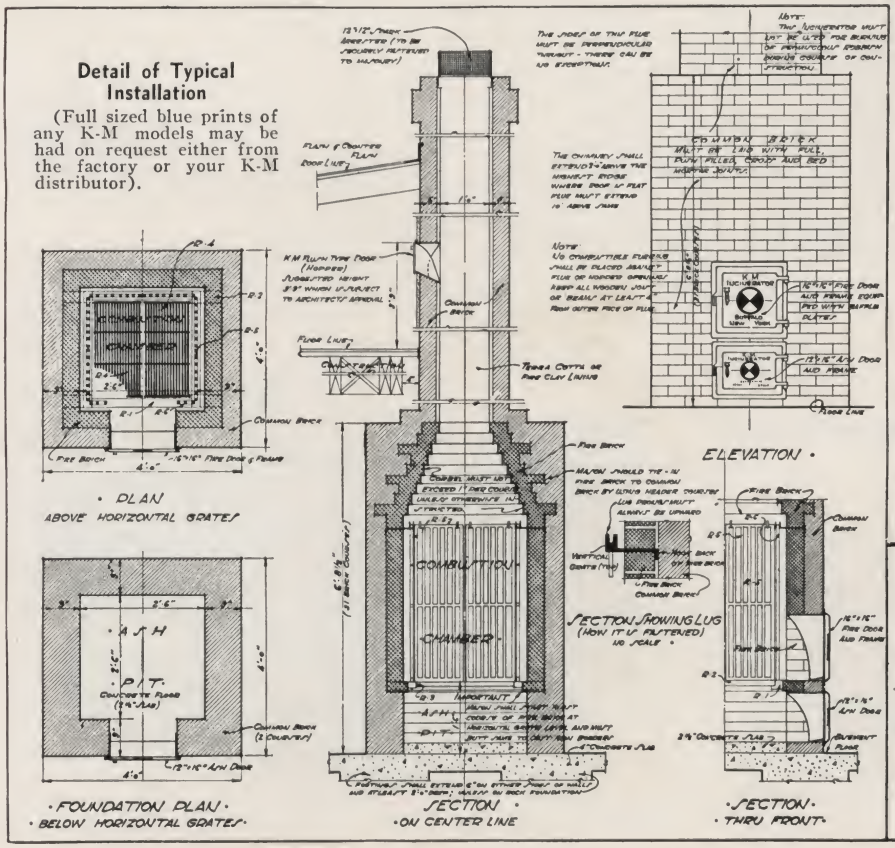


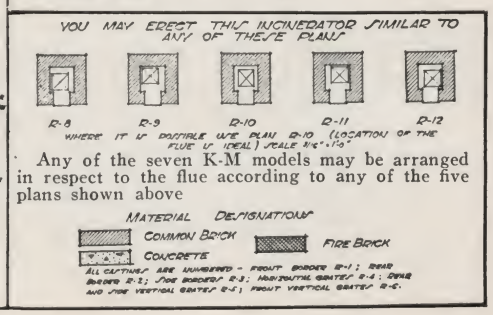
Double Leaf Clean Out Door (Open)

The details of these parts deserve more than a passing glance. Notice the unusual thickness of them all. The offset constructions of the door makes it stronger. The baffle plate makes it last longer, more heat resistant as well as draft equalizing. The lip keeps out fire glare. Doors are carefully fitted and are smoke and odor proof. Handles are wire, designed not to get hot by air-cooling. The frame is wedge shaped and deep for secure anchoring in the masonry and the hinges are balanced to make easy opening and sealed closing.

Detail of Typical Installation

(Full sized blue prints of any K-M models may be had on request either from the factory or your K-M distributor).





Any of the seven K-M models may be arranged in respect to the flue according to any of the five plans shown above

MORSE BOULGER DESTRUCTOR COMPANY

213 East 42nd Street, NEW YORK, N. Y.

AGENCIES IN ALL PRINCIPAL CITIES

LOCAL REPRESENTATIVE

HEAVY-DUTY INCINERATION MORSE BOULGER DESTRUCTORS

The Product

HEAVY DUTY DESTRUCTORS for the Disposal of Wastes by Incineration.

Morse Boulger Destructors are of the brickset, high temperature type. Standard types and sizes are built for the incineration of garbage and rubbish, and many special Destructors have been designed and built for reluctantly combustible or highly inflammable wastes.

Morse Boulger Destructors are built by a permanent crew of skilled workmen engaged exclusively in this work. All materials used have been proven by years of service to be particularly adapted to incineration work.

The Company

The MORSE BOULGER DESTRUCTOR COMPANY, INC., has been engaged exclusively in the design and erection of incinerating plants for over thirty-six years.

Installations have been made in 33 States and 14 foreign countries. Plants in operation vary in capacity from 50 lbs. per hour to 360 tons per day.

Every Morse Boulger destructor built is guaranteed against defects in material and workmanship and carries a permanent guarantee as to capacity and correctness of design.

All installations are inspected periodically to insure most satisfactory performance.

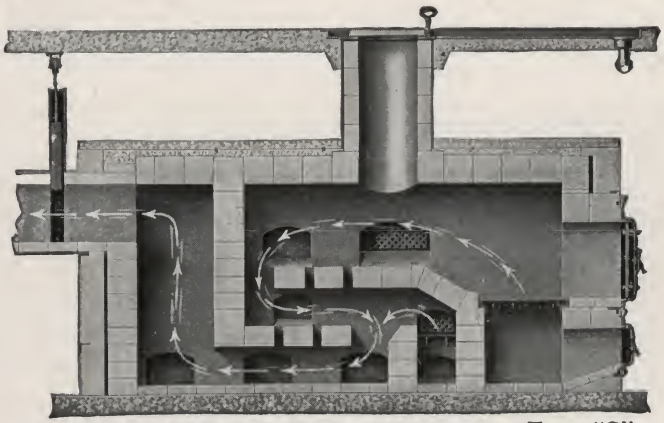
Garbage Destructors—"G" Type

Designed for the incineration of *garbage*. The garbage is burned on fire clay grate-arches; a three-way passage of the hot gases, a hot ash pit, and an adequate combustion and settling chamber are provided. The fuel grates are of cast iron and are separate from the garbage grates, assuring high temperatures and efficient use of commercial fuel. The design is long and narrow, which results in short arch spans and makes stoking and ash removal easy.

The three-way passage, with its "over and under" action, insures effective utilization of the heat for rapid drying and burning of the garbage. A long flame travel is secured and combustible gases are thoroughly mixed with air while in the heated zone. This feature enables Morse Boulger Destructors to incinerate wet garbage with no offensive odors or smoke, and with a minimum fuel consumption. Coal, oil or gas can be used. (Specify kind of fuel, so that details of design are adapted for fuel selected.) Combustible rubbish serves as fuel and frequently is all the fuel that is necessary.

Standard sizes 160 lb. per hour and up, as given in the table on the following page.

Uses—Especially designed for use in hotels, hospitals, clubs, institutions, etc.



Typical Morse Boulger Garbage Destructor—Type "G"

Rubbish Destructors—"R" Type

Designed for the incineration of *combustible rubbish.*

All the material is burned on cast iron grates; smoke and combustible gases pass through a checker wall into a large combustion chamber where they mix with air and burn, and where dust and light ashes are settled.

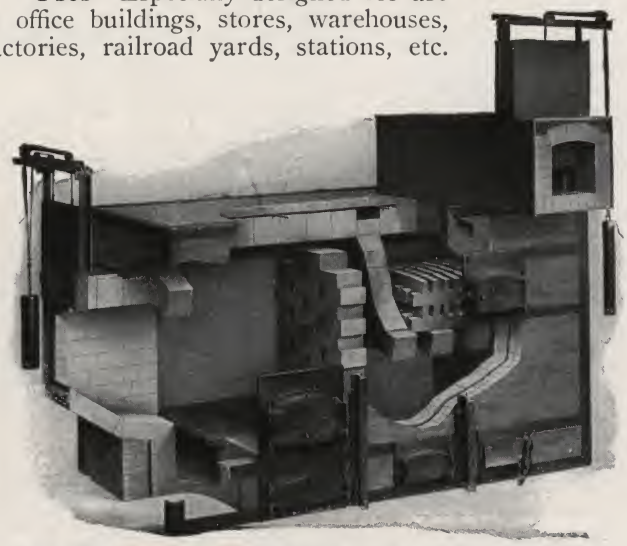
Checker work in the combustion chamber prevents funneling of gases into the flue before combustion has been completed.

The Destructor is especially designed for easy charging of materials, and the most rugged construction is used for durability.

20% of the material being burned may be ordinary garbage. No commercial fuel is required. Operation is without objectionable smoke, and no papers or cinders are discharged from the chimney.

Standard sizes 205 lb. per hour and up, as given in the table on the following page.

Uses—Especially designed for use in office buildings, stores, warehouses, factories, railroad yards, stations, etc.



Typical Morse Boulger Rubbish Destructor—Type "R"

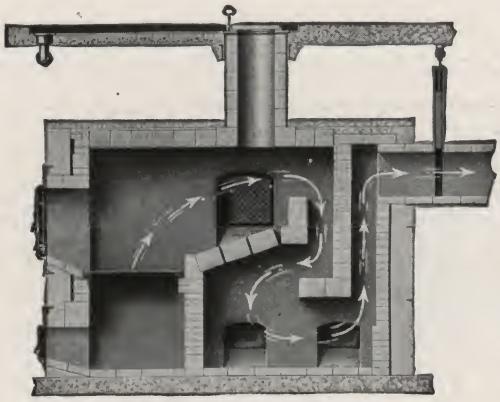
Rubbish-and-Garbage Destructors—"A" Type

Designed for work where both *garbage and combustible rubbish* must be handled in about equal quantities; also for rubbish alone. Garbage is burned on fire clay grate-arches, as in the "G" type. Rubbish is burned on cast iron grates. A large combustion and settling chamber is provided underneath the garbage grate, insuring large space for complete burning of gases and for settling of light ashes and dust. Placing this necessary chamber under garbage grate saves space and conserves heat. Garbage and rubbish are burned with no objectionable smoke or odor and with no discharge of papers or cinders from the chimney.

Under ordinary conditions, this unit operates without any commercial fuel. Garbage alone can be incinerated when necessary (up to 60% of rated capacity) using fuel in place of rubbish.

Standard sizes 125 to 600 lb. per hour, as given in table.

Uses—Especially designed for use in apartment houses, apartment hotels, schools, markets, bakeries, etc.



Typical Morse Boulger Rubbish and Garbage Destructor—Type "A"

Crematories

The Morse Boulger Crematory is of the brickset, high temperature, direct fire type and consists of two main chambers—an upper chamber for primary combustion and a lower chamber for the combustion of the gases. Cremation is rapid, economical, and odorless. Oil or gas may be used for fuel.

The standard crematory for the incineration of one body is 12 ft. 7 in. long, 6 ft. 4 in. wide, 9 ft. 3 in. high. Other units are built for morgues, medical schools, laboratories, etc.

Special Destructors

Many special destructors have been designed and built for unusual applications and waste materials. Examples of these are incinerators for sewage screenings, laboratory equipment for medical schools, etc., fume burners for ink plants and paint plants, bond burners and currency burners for destroying cancelled documents under lock and key, and destructors for burning the insulation off copper wire scrap without excessive scaling of the wire and with complete combustion of odors and all smoke.

Morse Boulger Engineers are particularly fitted, by breadth of experience, to deal with special problems.

Capacity Required

Incinerators should be rated in pounds per hour of a specified class of material. Volume means very little, because the unit weight varies between wide limits. Garbage cans vary in size—a can 18x24 in. being nearly twice as large as one 14x22 in.—so that capacity should not be specified in number of garbage cans. If the amount of waste material is not definitely known (as on a new project) a close estimate, based on experience with similar projects, can be made by Morse Boulger Engineers, when furnished with information regarding the size and character of the job under consideration.

Service to Architects and Engineers

Convenient and practical arrangement is just as essential as good equipment. A great number of incineration systems have been laid out and built by Morse Boulger Destructor Engineers, who can often save you time, space, and money if consulted when plans are in sketch state. A standard A.I.A. File with complete information will be sent on request.

Suggested Architect's Specifications

The ..... contractor shall furnish one Model No. ..... Type ..... Morse Boulger Destructor in accordance with plans and specifications in the architect's office. The Destructor and related equipment shall be erected in place by the Morse Boulger Destructor Company.

DIMENSIONS AND CAPACITIES OF STANDARD MORSE BOULGER DESTRUCTORS

Type "G" for Garbage					Type "R" for Combustible Rubbish					Type "A" for Rubbish and Garbage				
Model No.	Capacity, lb. per hr.	Dimensions, ft. in.			Model No.	Capacity, lb. per hr.	Dimensions, ft. in.			Model No.	Capacity, lb. per hr.	Dimensions, ft. in.		
		Length	Width	Height			Length	Width	Height			Length	Width	Height
1½-G	160	9—0	4—7	5—7	2-R	205	7—0	5—3	6—8	1¼-A	125	7—4	4—0	5—3
2 -G	215	10—9	4—7	5—7	3-R	288	8—0	5—3	7—6	2 -A	200	8—6	4—0	5—8
3 -G	340	12—9	6—0	6—7	4-R	400	11—0	5—6	7—6	3 -A	300	9—4	4—7	6—1
4 -G	430	14—0	6—0	6—7	5-R	480	12—3	6—0	8—0	4 -A	450	10—2	5—2	7—4
5 -G	520	15—6	6—0	7—0	6-R	630	13—0	6—6	8—0	6 -A	600	12—5	5—6	7—9
6½-G	660	17—0	6—0	7—3	7-R	700	14—0	6—6	8—0					
8 -G	815	18—0	6—6	7—7	8-R	800	14—0	7—0	8—0					

Note: Working space at least equal to width of destructor is necessary on one side and is desirable on one end.
For clearances, sizes of flues and breechings, permissible length of charging chutes, etc., send for detailed information on any particular project.

Representative Installations

Hospitals

Columbus, Great Falls, Mont.
St. Joseph's, Paterson, N. J.
St. Joseph's, Milwaukee, Wis.
Mercy, Pittsburgh, Pa.
Doctors', New York, N. Y.
St. Mary's, Knoxville, Tenn.
Olive View Sanitarium, Los Angeles, Cal.
Harper, Detroit, Mich.
Children's, Buffalo, N. Y.
Johns-Hopkins (3), Baltimore, Md.
Bellevue (3), New York, N. Y.
Columbia-Presbyterian, New York, N. Y.
St. Luke's, Cleveland, Ohio
Fifth Avenue, New York, N. Y.
Sacred Heart Sanitarium, Milwaukee, Wis.
Good Samaritan, Cincinnati, Ohio
Good Samaritan, Philadelphia, Pa.
Stark County Tuberculosis, Canton, Ohio
Sisters of Charity, Mt. St. Joseph's, Mo.
Syracuse City, Syracuse, N. Y.
Welland, Welland, Ont.

Medical and Other Schools

University of Pennsylvania (2), Philadelphia, Pa.
Rockefeller Medical Center, New York, N. Y.
Iowa State University, Ames, Iowa
University of Rochester, Rochester, N. Y.
Johns-Hopkins, Baltimore, Md.
Cornell Medical College, New York, N. Y.
Bellevue Medical College, New York, N. Y.
Jefferson Medical College, Philadelphia, Pa.
Meharry Medical College (2), Nashville, Tenn.
State Teachers College, Hattiesburg, Miss.

Clubs

American Women's Assn., New York, N. Y.
Brooklyn Elks, Brooklyn, N. Y.
Harvard, Boston, Mass.
Suburban, Baltimore, Md.
Kirtland Country, Cleveland, Ohio
Chevy Chase Country, Washington, D. C.
New York Athletic, New York, N. Y.

Hotels and Apartments

John Marshall, Richmond, Va.
New Yorker, New York, N. Y.
Governor Clinton, New York, N. Y.
Lord Baltimore, Baltimore, Md.
St. George, Brooklyn, N. Y.
Alcazar, Cleveland, Ohio
Stevens, Chicago, Ill.
Palmer House (2), Chicago, Ill.
Schroeder, Milwaukee, Wis.
Bismarck, Chicago, Ill.
Taft, New Haven, Conn.
William Penn, Pittsburgh, Pa.
Copley-Plaza, Boston, Mass.
Plaza, New York, N. Y.
Savoy-Plaza, New York, N. Y.
Lee-Plaza, Detroit, Mich.
Biltmore, New York, N. Y.
Miami-Biltmore, Coral Gables, Fla.
DuPont-Biltmore, Wilmington, Del.
Belleview-Biltmore, Bellaire, Fla.
Astor (2), New York, N. Y.
Lincoln, New York, N. Y.
Pittsburgher, Pittsburgh, Pa.

Banks and Office Buildings

Chase National Bank, New York, N. Y.
Union Trust Co., Detroit, Mich.
City National Bank, Bridgeport, Conn.
Bank of N. Y. & Trust Co., New York, N. Y.
National City Bank, Haiti
Fidelity-Philadelphia Trust Co., Philadelphia, Pa.
Chrysler Bldg., New York, N. Y.
Union Gas & Electric Bldg., Cincinnati, Ohio
Consolidated Gas Co., New York, N. Y.
Penn Power & Light Bldg., Allentown, Pa.
Guaranty Trust Co., New York, N. Y.

Miscellaneous

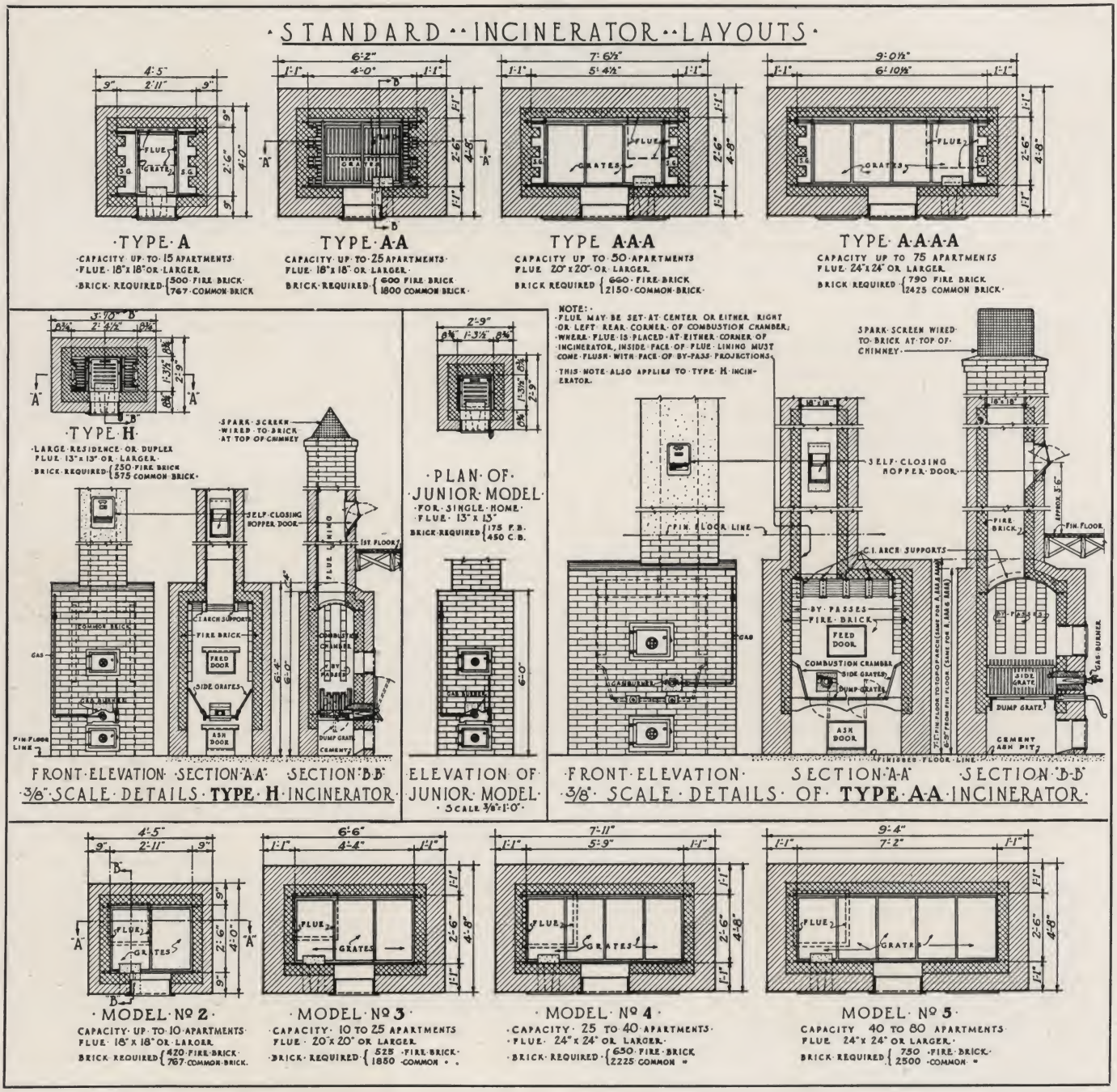
Detroit Union Produce Terminal, Detroit
Chicago Union Station, Chicago, Ill.
Washington Terminal, Washington, D. C.
Pennsylvania Station, New York, N. Y.
Pennsylvania R.R. Warehouse, Philadelphia, Pa.
Pennsylvania R.R. Yard, Chicago, Ill.
N. Y. C. R. R., 31st St. Yard, New York, N. Y.
Boston & Maine R.R., East Cambridge, Mass.
Boston & Maine R.R., Charlestown, Mass.
Goodyear Tire & Rubber Co. (2), Akron, Ohio
R. H. Macy & Co. (4), New York, N. Y.
L. Bamberger & Co., Newark, N. J.
Hecht Bros., Dept. Store, Baltimore, Md.
Sears, Roebuck & Co., Atlanta, Ga. and Los Angeles, Cal.
Great Atlantic & Pacific Tea Co. (17)
Dugan Bros., Newark, N. J., Brooklyn, N. Y., and Queens Village, L. I., N. Y.
Breyer Ice Cream Co., Philadelphia, Pa., Newark, N. J., and Long Island City, N. Y.

PITTSBURGH INCINERATOR COMPANY

PITTSBURGH, PA.

BRANCH OFFICES IN PRINCIPAL CITIES •

PITTSBURGH BUILT-IN-THE-CHIMNEY FLUE FED INCINERATORS (PATENTED)



Information

The Pittsburgh Incinerators (types and models) of various sizes and capacities as shown hereon are of common brick construction, the interior of combustion chamber being lined with fire brick.

Each type or model is equipped with one, two or more dump grates and side grates where a type H, A, AA, AAA or AAAA is used. These grates are removable through feed doors.

Incinerators are equipped with patented gas burner.

The position of the flue may be in either corner or center over the combustion chamber, but must be perpendicular in all cases.

Flue area determined by the number of self-closing hopper doors.

All ash pits must be cemented.

Specification Insert

The mason contractor shall furnish and install where shown on the plans ( ) Type No. ( ) or Model No. ( ) Incinerator as manufactured by the PITTSBURGH INCINERATOR COMPANY, Pittsburgh, Pa., with all the necessary incinerator parts complete and in strict accordance with the detailed working drawings and directions as furnished by the manufacturer.

For special designs or requirements, address Superheater & Engineering Company, 39 Cortlandt Street, New York, N. Y.

PITTSBURGH BUILT-IN-THE-CHIMNEY FLUE FED INCINERATORS (PATENTED)

The Pittsburgh Incinerator consists of a chamber built of red brick with fire brick lining at the base of a straight chimney or flue. Vertical by-passes or channels are provided on each side of the combustion chamber, assuring free air and draft circulation as well as immediate ignition of gases and complete odorless combustion of all waste materials.

Parts comprise grates, grate bearers, roof arches, fire and ash doors, shaker handle, shaker tubes, extension bars, all of heavy construction; special gas burner protected by a specially formed brick; and heavy galvanized wire spark arresters.

Incinerators for All Conditions

The Pittsburgh is recognized as one of the leading incinerator companies in the country, and it stands ready to furnish incinerators to meet all building conditions. Architects and builders will receive our full co-operation.



Automatic Self-closing Pittsburgh Aluminum Receiving Hoppers

Opening to flue interior securely closed during the loading operation, preventing fire and smoke from issuing through the hopper door. Complies with Underwriters' requirements

Hopper No.	Daylight opening, in.		Wall flange, in.		Wall opening, in.	
	High	Wide	High	Wide	High	Wide
1	8	8½	11	14	9	17
2	9	9½	12	16¼	9½	19
3	12	12	16	23	16	27
4	12	15	19	23	19	27

THE PITTSBURGH SAN-A-TOR PORTABLE AND WALL TYPES

Pittsburgh San-a-tor Portable Types 11-12-50-15

Self-contained and complete units delivered and shipped assembled, and can easily be installed and put in operation after a few minutes work in the same manner as an ordinary stove.

Aluminum, black, gray, green, tan and white paint colors, with nickel-plated or chrome-plated fittings. Enamel all colors.

Scientifically odorless San-a-tor lined with 2-in. fire brick encased in 18-gauge galvanized rustless steel, cast iron front, top and base. All parts can easily be removed by hand through the fire door of the incinerator.

Loop type design gas burner, according to the United States Bureau of Standards, and American Gas Association.

9-in. diameter flue outside regular connection, also 7-in. diameter flue inside connection.



Pittsburgh San-a-tor Portable Type No. 11

Wall Types 21-22-31-32-41-42-25

Complete units delivered and shipped assembled, same as Portables No. 11-12-50-15.

Same colors as portable types.

Construction same as the portable, except Types 21, 22, 31 and 32 have flat tops and a 7-in. diameter hole with front flange for fitting into the wall, also Types 31 and 32 have an open base for ash drop to basement. Types 41 and 42 have a 12x12-in. flue—can be installed in the kitchen wall and garbage fed into the hopper from the floor above, or installed in the basement and bricked up to the hopper in the kitchen.

Type 25 has 16x16-in. cut-out top, same flue capacity, installed same as Types 41 and 42.



Pittsburgh San-a-tor Wall Type No. 21

CAPACITIES AND DIMENSIONS PORTABLE TYPE

No.	Capacity, bu.	Height, in.	Floor space, in.	Fire door, in.	Flue capacity, in.	Gas connection, in.	Shipping weight, lb.
11	1	37	21x21	7¼x11¼	9	¾	450
12	2	55	21x21	9¼x11¼	9	¾	700
50	Peck	37	21x21	7¼x11¼	9	¾	450
15	5	59	24x31	12 x16	9	¾	1800

CAPACITIES AND DIMENSIONS WALL TYPE

No.	Capacity, bu.	Height, in.	Floor space, in.	Fire door, in.	Flue capacity, in.	Gas connection, in.	Shipping weight, lb.
21	1	31½	18x18	7¼x11¼	9	¾	450
22	2	49½	18x18	9¼x11¼	9	¾	700
31	1	31½	18x18	7¼x11¼	9	¾	450
32	2	49½	18x18	9¼x11¼	9	¾	700
41	1	31½	18x18	7¼x11¼	12x12	¾	450
42	2	49½	18x18	9¼x11¼	12x12	¾	700
25	5	59½	24x31	12 x16	16x16	¾	1800

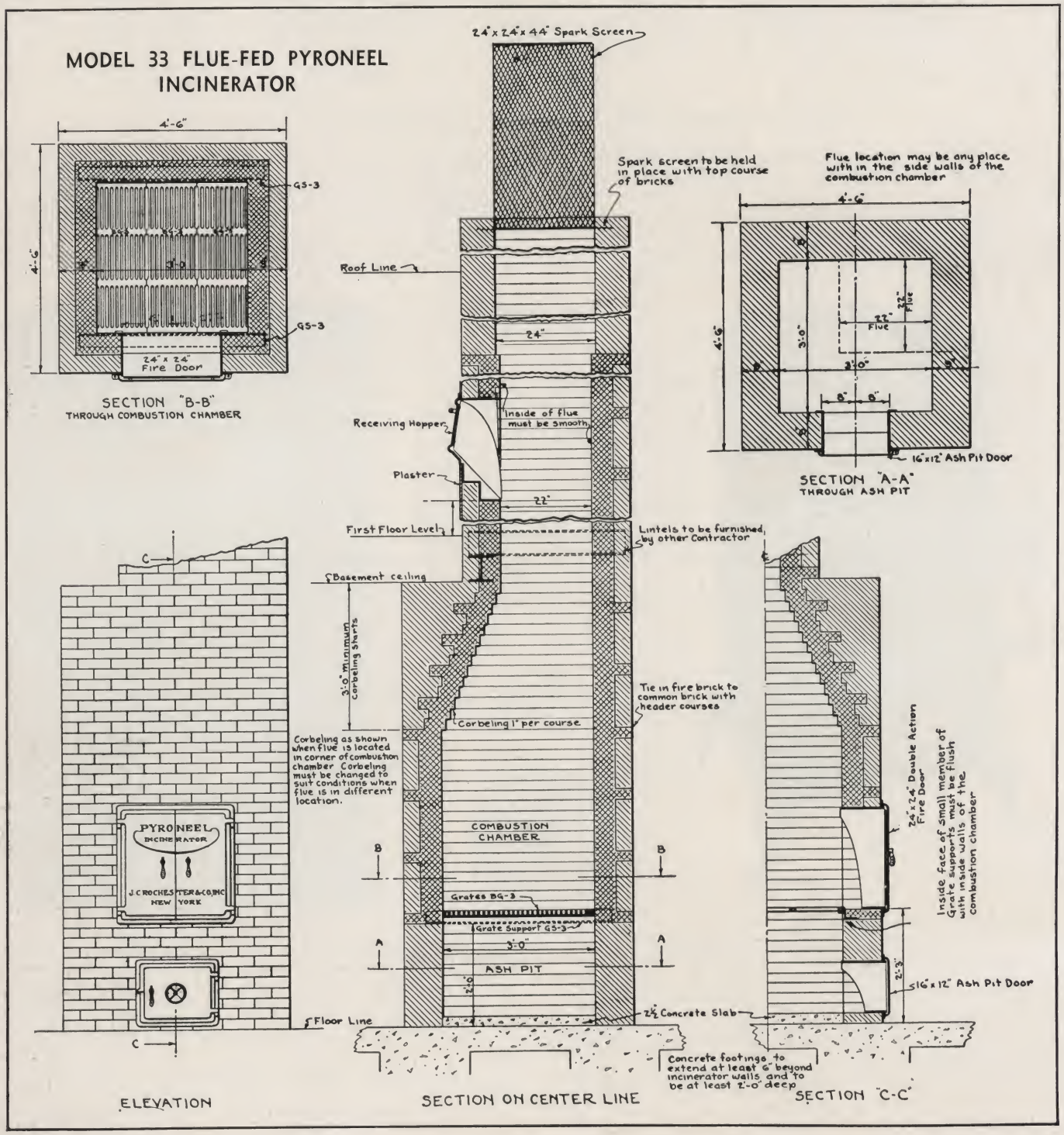
PYRONEEL FLUE-FED INCINERATORS

For Apartments and Residences

J. C. ROCHESTER & CO., INC.
370 Lexington Avenue, NEW YORK, N. Y.

The drawing of Model 33 PYRONEEL Incinerator shown below, clearly indicates the simplicity of design. Only the essential elements are found; no movable parts, unnecessary accessories or complicated brick work are included. All of the 22 models, with grate areas from 2 to 24 square feet, are rectangular in shape so that they may be joined to other masonry without complications.

Garbage and other refuse are wrapped in bundles, placed in the Receiving Hopper Door and allowed to drop down the Flue into the Combustion Chamber where it is dried out by the air which the draft sucks through the Damper of the Ash Door; since there is no other path, this air must all pass up and through the refuse which accumulates on the grates. Periodically the refuse is lighted through



the Fire Door; no auxiliary fuel is necessary because of the normal excess of dry over wet refuse, aided by the drying process just mentioned. Tin cans, bottles, etc. should be fed through the Receiving Hopper Door unwrapped as they tend to keep the bundles of refuse separated and thus insure free circulation of the air. Unburned, but thoroughly sterilized tin cans, bottles, etc. are removed through the Fire Door; the ashes drop through the Grates into the Ash Pit and are removed through the Ash Doors.

Ash Door

Made of best grade stove iron with oversize hinges and catches; box type frame, 9 in. at top to form lintel for overhead brick work, has four anchor lugs cast integral with same; door of single leaf type with sturdy rotary damper. Clear opening, 14¾x10¾ in.

Fire Door

Similar in construction to Ash Door except door is of the double leaf type and damper is omitted; each leaf has perforated cast iron baffle; each leaf has double catch (top and bottom) and right leaf overlaps the left. Clear opening, 22½x22½ in.

Grate Supports

Made of 1¼-in. hot-rolled angles hot riveted to 3-in. hot-rolled angles at 6-in. intervals. The larger angle is built securely into the brickwork without cutting any bricks; the smaller angle supports the Grates flush with top of Grate Supports.

Grates

Made of best grade stove iron; thickness properly proportioned to length; cross-braced to prevent warpage; removable through Fire Door.

Receiving Hopper Door

Made of best grade stove iron with extra heavy hinge lugs and hinge pins; box type frame, fully enclosing hopper all around, has integral anchor lug at top and a stepped bottom to rest flat on brickwork and also serve as anchor; door has heat-insulated handle full 5 in. wide; hopper made of heavy gauge galvanized sheet iron with rolled edges and arranged to act as baffle for door, the angle of chute being full 45 degrees to assure non-retention of refuse. Lugs in back of flange act as plaster grounds and metal lath attached to face of lower portion of frame permits plastering to edge of flange; clear opening, 10x11 in.



Receiving Hopper Door
(Automatic Door Closer, as shown at left, optional)

Automatic Door Closer

Of proven coil spring type with hydraulic dampeners, the Door Closer is adjustable for quick return, for quiet closing and for quiet opening with all adjusting screws capped to prevent tampering; is applicable to either side of Receiving Hopper Door without the use of any intermediate lever, thereby obviating possibility of crushed fingers; outside application insures uniform operation because heat of flue gases cannot affect same.

Advantages

Twenty-two standard sizes available from 11 standard parts; no vertical grates, by-passes, auxiliary flues or other complications in design assure adaptability to normally difficult basement layouts as well as rapid and easy erection; as all air is admitted through Ash Door, it must pass through refuse and cannot be wasted through by-passes, around vertical grates, etc.; omission of damper from Fire Door concenrates draft control at one point, the Ash Door; all grates readily removable through Fire Door; flat Grates prevent dumping unburned combustible material into Ash Pit; no jamming or clogging of grates; anchor lugs and wide flanges of doors assure firm anchorage in masonry and eliminate air leakage; unburnable matter such as bottles, etc. raked out through Fire Door directly into standard 27-in. high ash cans; only ashes of burned refuse need be shoveled out through Ash Door; corbelled roof of Combustion Chamber eliminates necessity of setting auxiliary iron work or building complicated forms.

PYRONEEL FLUE-FED INCINERATOR DATA

The following tabulation of parts and sizes, together with data relative to flue sizes and chimney heights, gives all information necessary to select the proper size Incinerator for any requirements

Model No.	Parts list											Size data								Flue data					
			Grates			Grate supports						Combustion chamber				Overall dimensions		Capacity, bushels		Recommended			Minimum		
																					Chimney height			Chimney height	
	Ash door No. 1612	Fire door No. 2424	BG-2	BG-3	BG-4	GS-1	GS-2	GS-3	GS-4	GS-5	GS-6	Width	Depth	Grate area, sq. ft.	Wall thickness	Width	Depth	Based on 9′ 0″ headroom	Add or subtract for each 6″ variation in headroom	Flue size	Minimum	Maximum without expansion chamber	Flue size	Minimum	Maximum without expansion chamber
21	1	1	1	...	...	2	...	...	...	...	...	2′ 0″	1′ 0″	2	9″	3′ 6″	2′ 6″	9.8	0.8	11″ x 11″	30′ 0″	60′ 0″	8″ x 8″	20′ 0″	40′ 0″
22	1	1	2	...	...	...	2	...	...	...	...	2′ 0″	2′ 0″	4	9″	3′ 6″	3′ 6″	19.6	1.6	11″ x 11″	40′ 0″	65′ 0″	8″ x 11″	25′ 0″	45′ 0″
23	1	1	...	2	...	...	2	...	...	...	...	2′ 0″	3′ 0″	6	9″	3′ 6″	4′ 6″	23.7	2.4	11″ x 16″	40′ 0″	60′ 0″	10″ x 10″	30′ 0″	45′ 0″
24	1	1	...	...	2	...	2	...	...	...	...	2′ 0″	4′ 0″	8	9″	3′ 6″	5′ 6″	27.6	3.2	16″ x 16″	40′ 0″	60′ 0″	11″ x 11″	30′ 0″	50′ 0″
25	1	1	5	...	...	...	...	...	...	2	...	2′ 0″	5′ 0″	10	9″	3′ 6″	6′ 6″	34.5	4.0	16″ x 16″	50′ 0″	65′ 0″	11″ x 16″	40′ 0″	50′ 0″
26	1	1	6	...	...	...	...	...	...	...	2	2′ 0″	6′ 0″	12	9″	3′ 6″	7′ 6″	41.4	4.8	16″ x 16″	60′ 0″	70′ 0″	11″ x 16″	45′ 0″	55′ 0″
32	1	1	3	...	...	...	...	2	...	...	...	3′ 0″	2′ 0″	6	9″	4′ 6″	3′ 6″	23.7	2.4	11″ x 16″	40′ 0″	60′ 0″	10″ x 10″	30′ 0″	45′ 0″
33	1	1	...	3	...	...	...	2	...	...	...	3′ 0″	3′ 0″	9	9″	4′ 6″	4′ 6″	31.1	3.6	22″ x 22″	60′ 0″	80′ 0″	16″ x 16″	40′ 0″	50′ 0″
34	1	1	...	...	3	...	...	2	...	...	...	3′ 0″	4′ 0″	12	9″	4′ 6″	5′ 6″	41.4	4.8	22″ x 22″	70′ 0″	85′ 0″	16″ x 16″	50′ 0″	60′ 0″
35	1	1	...	5	...	...	...	...	...	2	...	3′ 0″	5′ 0″	15	9″	4′ 6″	6′ 6″	51.8	6.0	22″ x 22″	80′ 0″	90′ 0″	18″ x 18″	60′ 0″	70′ 0″
36	1	1	...	6	...	...	...	...	...	...	2	3′ 0″	6′ 0″	18	9″	4′ 6″	7′ 6″	62.2	7.2	22″ x 22″	90′ 0″	95′ 0″	18″ x 18″	65′ 0″	75′ 0″
42	2	1	4	...	...	...	...	...	2	...	...	4′ 0″	2′ 0″	8	9″	5′ 6″	3′ 6″	27.6	3.2	22″ x 22″	55′ 0″	75′ 0″	16″ x 16″	45′ 0″	55′ 0″
43	2	1	...	4	...	...	...	...	2	...	...	4′ 0″	3′ 0″	12	9″	5′ 6″	4′ 6″	41.4	4.8	22″ x 22″	70′ 0″	80′ 0″	18″ x 18″	45′ 0″	60′ 0″
44	2	1	...	...	4	...	...	...	2	...	...	4′ 0″	4′ 0″	16	13″	6′ 2″	6′ 2″	55.2	6.4	22″ x 22″	85′ 0″	85′ 0″	18″ x 18″	60′ 0″	65′ 0″
45	2	1	...	...	5	...	...	...	...	2	...	4′ 0″	5′ 0″	20	13″	6′ 2″	7′ 2″	69.0	8.0	22″ x 22″	100′ 0″	100′ 0″	18″ x 18″	75′ 0″	75′ 0″
46	2	1	...	...	6	...	...	...	...	...	2	4′ 0″	6′ 0″	24	13″	6′ 2″	8′ 2″	82.8	9.6	24″ x 24″	120′ 0″	120′ 0″	20″ x 20″	80′ 0″	80′ 0″
52	2	1	5	...	...	...	...	...	...	2	...	5′ 0″	2′ 0″	10	9″	6′ 6″	3′ 6″	34.5	4.0	22″ x 22″	60′ 0″	80′ 0″	18″ x 18″	50′ 0″	65′ 0″
53	2	1	...	5	...	...	...	...	...	2	...	5′ 0″	3′ 0″	15	9″	6′ 6″	4′ 6″	51.8	6.0	22″ x 22″	80′ 0″	85′ 0″	18″ x 18″	60′ 0″	65′ 0″
54	2	1	...	...	5	...	...	...	...	2	...	5′ 0″	4′ 0″	20	13″	7′ 2″	6′ 2″	69.0	8.0	22″ x 22″	100′ 0″	100′ 0″	18″ x 18″	75′ 0″	75′ 0″
62	2	2	6	...	...	...	...	...	...	...	2	6′ 0″	2′ 0″	12	9″	7′ 6″	3′ 6″	41.4	4.8	24″ x 24″	80′ 0″	80′ 0″	20″ x 20″	65′ 0″	65′ 0″
63	2	2	...	6	...	...	...	...	...	...	2	6′ 0″	3′ 0″	18	9″	7′ 6″	4′ 6″	62.2	7.2	24″ x 24″	100′ 0″	100′ 0″	20″ x 20″	80′ 0″	80′ 0″
64	2	2	...	...	6	...	...	...	...	...	2	6′ 0″	4′ 0″	24	13″	8′ 2″	6′ 2″	82.8	9.6	24″ x 24″	120′ 0″	120′ 0″	20″ x 20″	95′ 0″	95′ 0″

WASHBURN & GRANGER, INC.

Manufacturers of Dean Incinerators, Boiler Grates, Ash Can Hoists and Floor Grids

50 Church Street, NEW YORK, N. Y.

COMPLETE SPECIFICATIONS FOR DEAN TYPE A INCINERATOR

Where space appears in these specifications, supply data and dimensions from table below

General—Furnish all material and labor necessary to complete one Dean Type A .... (refer to table for size) Incinerator, as manufactured by WASHBURN & GRANGER, INC., 50 Church Street, New York, N. Y.

Foundation—Do all excavation, removing surplus earth from the premises. Install concrete slab of not less than 12 in. in depth and to extend 4 in. beyond exterior walls. These foundations are to be made of one, three and five parts of best portland cement, clean sharp sand and hard durable clean broken stone, screened through 1-in. mesh. All to be mixed and poured in an acceptable manner, and finished level with the floor.

Dimensions and Capacity—The incinerator is to measure .... ft. .... in. long x .... ft. .... in. wide x .... ft. .... in. high. The capacity is to be .... pounds of mixed refuse per hour.

Steelwork—The incinerator setting is to be reinforced by a structural steel frame, consisting of four vertical corner angles 5x3x$\frac{5}{16}$ in. and four horizontal angles 2½x2½x¼ in. in all four walls of the setting. The entire steel frame is to be bolted together and all door frame castings are to be bolted in position before the brickwork is started. Charging chute shall be No. 12 gauge black steel (refer to "H" in table) outside diameter and of sufficient length to connect the top arch of the incinerator with the floor above. The buckstays shall be four in number each consisting of two 4-in. x 6¼-lb. channels placed back to back and held in position with 1-in. diameter tie rods top and bottom. Furnish two 5x3x$\frac{5}{16}$-in. angles for supporting the charging chute.

Castings—Furnish charging ring with opening (refer to "G" in table) diameter complete with cast iron swing cover fitted with ⅛-in. steel plate cover to protect lining. Provide a heavy firing frame with opening (refer to "J" in table) complete with doors and perforated cast iron liners. Provide a heavy ash pit frame with opening (refer to "K" in table) complete with door. Provide a side stoking frame having an opening (refer to "I" in table) complete with guillotine door lined with C-3 cement, steel lever arm, quadrant, bracket, counterweight, and handle. Provide two baffle cleanout frames with doors and cast iron liners and one combustion chamber cleanout door and frame with liner. Furnish inclined skeleton dead plate 17½ in. wide, length to suit door opening and with 5-in. pitch. Curved arch plate shall be 17½ in. wide, 1 in. thick and length to suit door opening. Also furnish for the stoking door opening a flat skeleton dead plate 18 in. wide x 24 in. long and one curved arch plate 18 in. wide, 1 in. thick, 36 in. long. Furnish herringbone stationary grates .... in. wide x .... in. deep, with .... air space for .... coal, complete with bearing bars and wall plates. Furnish cast iron base plate for supporting steel charging chute and necessary cast iron tie plates for the buckstays.

Brickwork—On types A1 to A7 inclusive, the front and rear walls shall be 17½ in. thick consisting of 9 in. No. 1 fire brick and 8 in. of hard red brick. The side walls shall be 18 in. thick consisting of 9 in. of No. 1 fire brick, 1 in. air space, and 8 in. of hard red brick. On types A8, 9 and 10, all four walls shall be 22 in. thick consisting of 9 in. of No. 1 fire brick, 1 in. air space and 12 in. of hard red brick. In all four walls every sixth course of fire brick shall be a stretcher course with a fire brick header tieing the fire brick to the red brick. On the red brick every fourth course shall be a header course. The drying hearth shall consist of fire brick 9 in. thick and shall have an incline of approximately 15° toward the coal grate. Furnish and set in the baffle chamber opposite the baffle door openings two baffles made of special heat resisting material. Charging chute shall be lined with 4½ in. of fire brick, charging ring cover shall be lined with 3 in. of C-3 cement and the skeleton dead plates shall be lined with standard fire brick. Top arch shall be semi-circular and consist of 9-in. standard wedge fire brick, 1-in. air space, 4-in. red brick arch, cinder fill and 1-in. cement finish. All fire brick shall be laid up in high temperature cement.

Damper—Furnish counterbalanced cast iron damper filled with 3 in. of C-3 cement and hung in a 4-in. steel channel guide and provided with steel lever arm, quadrant, bracket, counterweight and handle.

Draining Pan—Furnish a steel draining pan (refer to "P" in table) wide x (refer to "O" in table) long x 4 in. deep at the low point, made of $\frac{5}{16}$-in. plate with welded seams. Pan to have sloping bottom reinforced with steel angles, and to be fitted with drain casting tapped for 3-in. steel pipe. Furnish 2 ¾-in. globe valve; 1 ¾-in. faucet with hose thread; 12 ft. ¾-in. steam hose; 1 ¾-in. brass hose nozzle. The ¾-in. piping for steam and water valves and the 3-in. drain pipe connection to be installed by other contractors.

Can Washer—Furnish and install one can washer to measure 2 ft. 8¼ in. wide x 3 ft. 0 in. deep x 4 ft. 0 in. high, base to be of cast iron in one piece with legs to raise it 10 in. above floor line, sides of No. 11 sheet steel reinforced with angles. Door to be hinged type with rubber gasket and locking handles. Furnish brass spray nozzles for upper and lower connections, also special 8x6-in. strainer in base casting. The ½-in. cold water, ½-in. steam, ¾-in. hot water, and 4-in. drain connections are to be installed by other contractors.

Stoking Tools—Furnish a set of 3 stoking tools consisting of the following: 1 shovel, 1 hoe, 1 slice bar. Furnish rack for the above tools and install same in a convenient location.

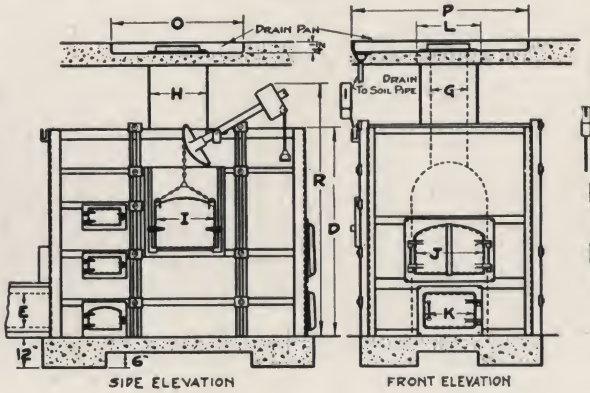
Steel Flue—Approximate length .... ft. .... in. Flue shall be rectangular and consist of No. 10 gauge steel sheets reinforced at the bottom corners with 3x3x¼-in. angles and at the top corners with 1½x1½x$\frac{5}{16}$-in. angles. The flue shall be lined with 3-in. fire brick blocks having shiplap joints. Asbestos board ¼ in. thick shall be placed between the shell and the fire brick lining. Furnish cleanout doors and frames at convenient points for cleaning. Inside dimensions of flue (refer to "E" in table) in. high by (refer to "F" in table) in. wide.

Brick Flue—Approximate length .... ft. .... in. Flue shall have 4½-in. fire brick lining backed up with 8 in. of red brick in side walls, 4 in. of red brick over arch and 2 in. of red brick under floor of flue. Flue shall be reinforced with 4-in. x 6¼-lb. channel buckstays spaced on 36-in. centers and tied together with ¾-in. diameter rods top and bottom. Furnish cleanout doors and frames for access to flue for cleaning. Inside dimensions of flue (refer to "E" in table) in. high by (refer to "F" in table) in. wide.

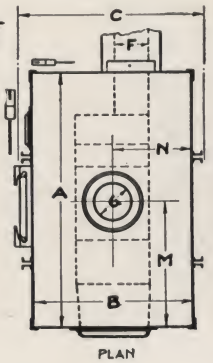
Painting—All structural steel shapes and finished castings shall have one coat of shop paint prior to shipment and a second coat of black asphaltum paint on exposed surfaces after completion of the brickwork.



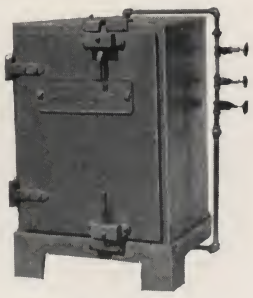
Dean Type A Incinerator



SIDE ELEVATION FRONT ELEVATION



PLAN



Dean Can Washer

CAPACITIES AND DIMENSIONS OF DEAN TYPE A INCINERATORS

Type and size	Capacity, lb. per hour	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	R
A-½	100	8′ 0½″	4′ 2″	5′ 4″	7′ 1½″	13½″	13″	12″	21¼″	20″x24″	17″x24″	12″x15″	24″	3′ 10″	25″	6′ 0″	4′ 0″	9′ 0″
A-1	150	8′ 8½″	5′ 6″	6′ 8″	7′ 1½″	16″	13″	15″	24¼″	20″x24″	19″x28″	13″x20″	27″	4′ 2½″	33″	7′ 0″	5′ 0″	9′ 0″
A-2	225	10′ 1½″	6′ 0″	7′ 2″	7′ 1½″	18½″	18″	15″	24¼″	20″x24″	19″x28″	13″x20″	27″	5′ 0″	36″	8′ 0″	6′ 0″	9′ 0″
A-3	375	13′ 8½″	6′ 6″	7′ 8″	8′ 5½″	24″	18″	18″	27¼″	20″x24″	19″x28″	15″x20″	30″	6′ 6″	39″	9′ 0″	6′ 0″	10′ 4″
A-4	525	15′ 5½″	7′ 0″	8′ 2″	8′ 5½″	25″	23″	18″	27¼″	24″x36″	19″x28″	15″x20″	30″	7′ 6″	42″	10′ 0″	6′ 0″	10′ 4″
A-5	675	17′ 0½″	7′ 6″	8′ 8″	8′ 5½″	32″	23″	18″	27¼″	24″x36″	24″x30″	15″x20″	30″	8′ 6″	45″	11′ 0″	6′ 0″	10′ 4″
A-6	825	21′ 0″	8′ 0″	9′ 2″	9′ 0″	37″	27″	18″	27¼″	(2) 12″x20″	24″x30″	14″x28″	30″	9′ 0″	48″	12′ 0″	6′ 0″	11′ 0″
A-7	1000	22′ 0″	8′ 6″	9′ 8″	9′ 4″	37″	31½″	24″	33¼″	(2) 17″x21″	28″x46″	(2) 17″x21″	36″	10′ 0″	51″	12′ 0″	7′ 0″	11′ 6″
A-8	1250	26′ 3″	9′ 8″	11′ 0″	10′ 0″	45″	31½″	24″	33¼″	(2) 17″x24″	(2) 17″x24″	(2) 17″x24″	36″	13′ 4″	58″	12′ 0″	8′ 0″	12′ 0″
A-9	1625	27′ 3″	10′ 8″	12′ 0″	10′ 6″	56″	31½″	30″	39½″	(2) 18″x30″	(2) 24″x30″	(2) 19″x28″	42″	14′ 0″	64″	12′ 0″	9′ 0″	12′ 6″
A-10	2000	27′ 3″	11′ 8″	13′ 0″	11′ 0″	64″	31½″	30″	39½″	(2) 18″x30″	(2) 24″x30″	(2) 19″x28″	42″	14′ 0″	70″	12′ 0″	10′ 0″	13′ 0″

Data and specifications will be furnished for requirements which cannot be covered by the above standard sizes. Send for No. 17 Catalog.

Dean Type B Incinerator for Dry Combustible Refuse

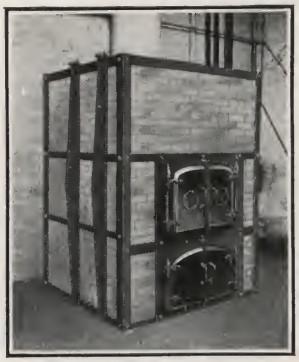
For industrial plants, factories, loft buildings, railroad terminals, warehouses, department stores, large office buildings, etc.

Capacities from 90 to 378 cu. ft. per hour of dry refuse.

Send for Catalogue No. 17 for installation details and specifications.



Dean Type B Incinerator



Dean Type C Incinerator

Dean Type C Incinerator for Rubbish and Other Light Material

For public schools, public buildings, museums, and office buildings.

Capacities from 66 to 108 cu. ft. per hour.

Send for Catalogue No. 17 for installation details and specifications.

DEAN BOILER GRATES

Dean Dumping Grates

Built for burning the small sizes of anthracite coal with either natural or forced draft. Bars tip in tandem to an angle of 65 degrees and are supported at both ends by a rectangular frame which eliminates entirely the tendency of the bars to hang downward on the ends. Air spaces ⅛ to ⅜-in. slot and also built in the pinhole form with ¼ or $\frac{5}{16}$-in. diameter openings. Fires can be cleaned in one-half the time required with stationary bars.

Catalogue No. 10 on request.

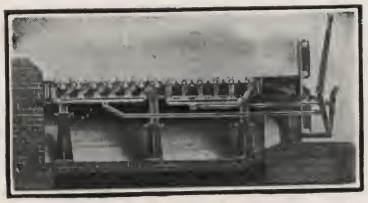


The Dean Dumping Grate

Dean Shaking Grates

Used for bituminous and the larger sizes of anthracite coal, both fuels requiring a grate with an oscillating or shaking movement. Supported by a frame resting on the ashpit floor independent of the brickwork with bars placed on 8-in. centers, allowing ample opening for the largest clinkers. Journals self-locking requiring no caps. The sides of the bars are made solid which is a necessity as ninety per cent of the wear comes along these edges. Construction is of the most durable form to withstand hard service.

Catalogue No. 10 on request.

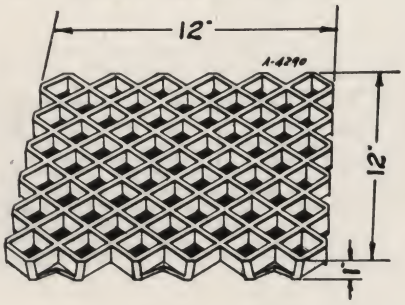


The Dean Shaking Grate

DEAN FLOOR GRIDS

General Uses—Used extensively in milk plants, loading platforms, boiler rooms, printing plants, warehouses, driveways, receiving and heavy storage areas; traffic aisles, garage and other ramps, and wherever the need for a floor which will withstand for years continuous heavy shocks without breaking up or needing costly repairs.

Made in One-foot Square Sections—Each section occupies 1 sq. ft. of floor space. This size is conveniently handled and quickly laid; gives the finished installation the best possible anchorage, and maximum flexibility in expansion and contraction.



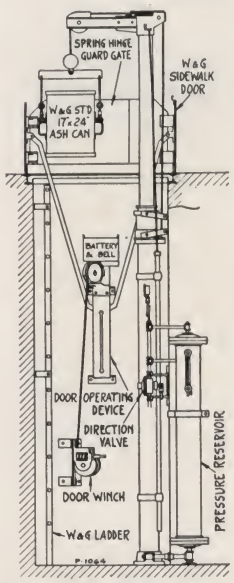
How to Specify

Furnish and set Dean Floor Grids as made by WASHBURN & GRANGER, INC., 50 Church Street, New York, N. Y., to cover area as per specifications and drawings. Each section to occupy 1 sq. ft. and to be approximately 1 in. thick.

On the rough concrete floor lay a thin bed of 1-to-5 cement and sand mortar. Set each section in this bed so that each piece is level with all others on all sides. After this mortar has set, pour the finish mortar, including cement hardener, over the sections and level off so that cement is flush with top of grids.

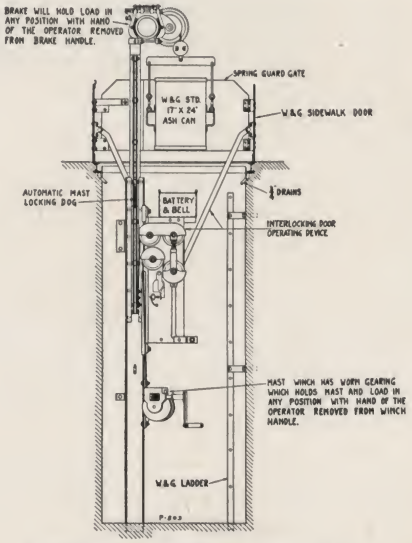
DEAN TYPES A, B, D AND F HAND AND POWER OPERATED ASH CAN HOISTS

Send for complete information on any of these types



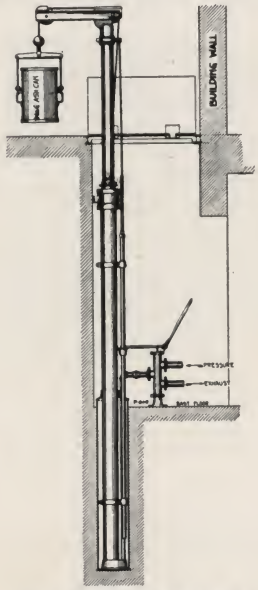
Dean Type A-1 Steam-operated Ash Can Hoist (Sidewalk Type)

Dean Type A-2 Steam-operated Ash Can Hoist (Wagon Type) similar to A-1



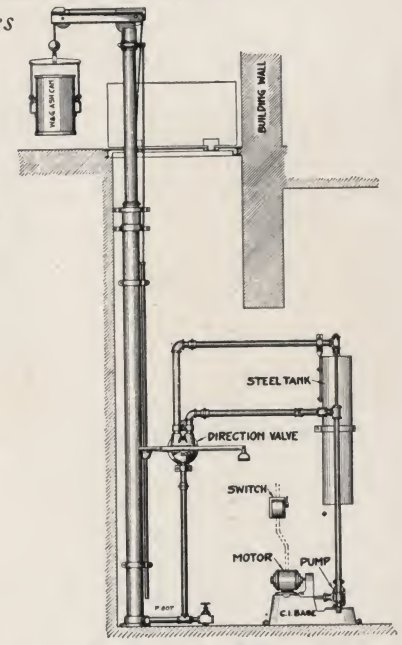
Dean Type B-1 Hand-operated Hoist (Sidewalk Type)

Dean Type B-2 Hand Operated Hoist (Wagon Type) similar to B-1



Dean Type D-1 Hydraulic Hoist (Sidewalk Type)

Dean Type D-2 Hydraulic Hoist (Wagon Type) similar to D-1



Dean Type F-1 Electric Hoist (Sidewalk Type)

Dean Type F-2 Electric Hoist (Wagon Type) similar to F-1

REX INCINERATOR CO., INC.

Baker Avenue and Belt Railway, EVANSVILLE, IND.

REPRESENTATIVES IN ALL PRINCIPAL CITIES

REXCO INCINERATORS

Rexco Incinerators are of the brick built-in chimney type installed at the base of the chimney or flue, for residences, apartments, institutions and commercial buildings, also for existing structures.

Rexco Incinerators are modern in construction featuring the basket and wing side grates, these with vents properly placed, causes complete continuous air circulation and draught through and on all sides of the waste, insures *quick drying and combustion.*

No steel to warp, all parts high grade castings.

Arranged for gas at very little additional cost.

Furnace and hopper door jambs have ribs, so they can be walled in rigid.

Spark arrestors furnished when desired.

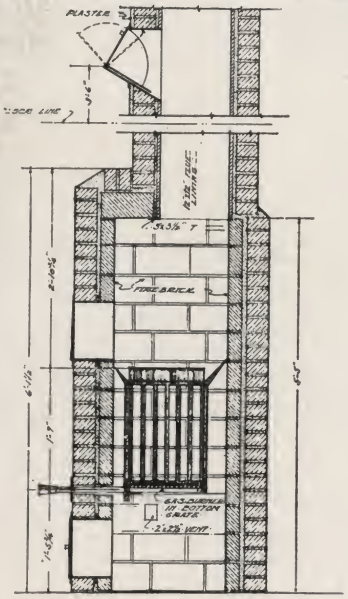
Hopper doors and frames highly polished aluminum. Silent self-closing attachments furnished when desired.

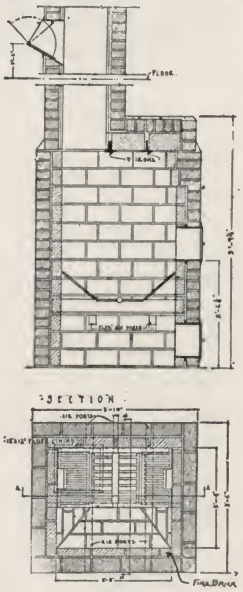
Efficient, safe and sanitary as the complete air circulation and draught, the large combustion chamber, results in *quick drying and combustion,* does not allow gasses to accumulate, eliminates all odor or smoke, unless flue is too small or clogged.

Simple to operate; *economical,* because no additional operating expense; *modern,* any interior grate can be removed, if necessary, without disturbing the brick work.

Satisfaction guaranteed when installed properly, according to blue print included with each assembly.

Catalogues and blueprints furnished on application.

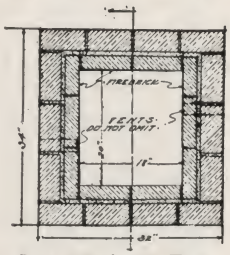




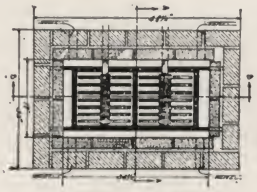
C-18 Wing Type
4 to 8 apartments
Floor space 42x46 in.



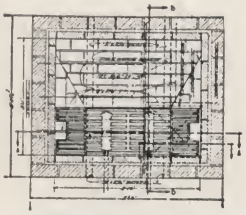
Basket Grate Assembly



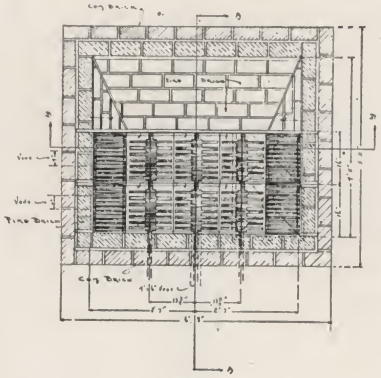
B-14 Residence Type
Floor space 34x32 in.



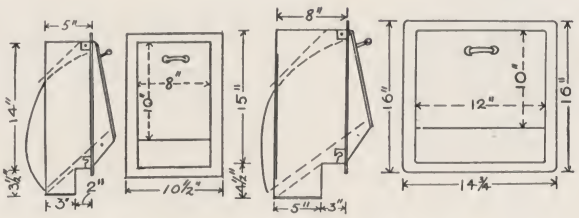
B-215 Basket Type
10 to 20 apartments
Floor space 32x50 in.



C-220 Wing Type
20 to 30 apartments
Floor space 60x52 in.

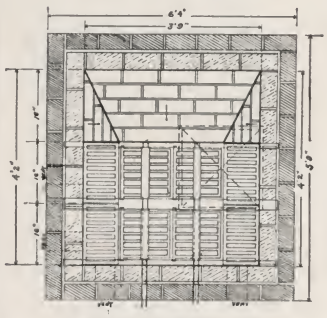


C-638
Large apartments and institutions
Floor space 80x72 in.



No. 1 No. 2

Rex Improved Hopper Doors
Polished aluminum, nickeled handles, heavy galvanized chute. No. 1 10x8 in. opening. No. 2 10x12 in. opening. No. 3 15x12 in. opening



C-430 Wing Type
30 to 50 apartments
Floor space 66x69 in.

B-14, B-215 and B-325 have basket type grate. Notice offset and full dumping grates and heavy construction.

C-18, C-220, C-430 and C-638 are wing type with sloping grates, showing full dump grates with wing side grates.

Note: Portholes or vents to insure circulation.

THE SPENCER TURBINE CO.

Member of The Producers' Council, Inc.

Manufacturers of Vacuum Cleaning Systems, Blowers and Exhausters

488 New Park Avenue, HARTFORD, CONN.

Products

CENTRAL VACUUM CLEANING SYSTEMS; SWIMMING POOL CLEANING EQUIPMENT; BOILER FLUE CLEANING APPARATUS.

Also Turbo Compressors; Organ Blowers (Orgoblo).

The Spencer System of Vacuum Cleaning

The Spencer Central Cleaning System has met with the approval of architects and engineers, and has been installed in thousands of hotels, theatres, office buildings, hospitals, schools, banks, etc. List of important installations sent on request.

The system consists of a vacuum producer, a piping system with inlet valves throughout the building, and equipment of lightweight hose and tools for cleaning all floors, walls, furniture, etc.

Advantages—Powerful suction draws all dust and dirt into the cleaning tool and through the system to the dirt container in the basement.



Cleaning Tile Floor

No exhaust air or any of the cleaning dust is blown back into the room. The stale air drawn through the system is discharged up the chimney or flue after passing through the separator.

The operator handles only the lightweight hose and cleaning tool.

All the machinery is in the basement where it is not moved or handled, and is therefore not skimped in size, weight or efficiency.

Spencer Vacuum Producers—The Spencer Vacuum Producer is of the turbine type but differs from most turbine exhausters in that it is designed and built especially for vacuum cleaning and with extra wide clearances throughout.

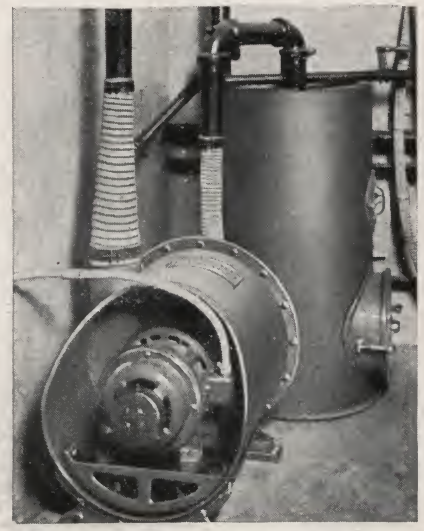
The impellers are made of the best sheet steel or duralumin; carefully balanced and tested. They are so proportioned that they will not clog or wear out and are mounted in the turbine casing with extra wide clearances on both sides. Thus no cloth bags, fine screens or similar devices are required or recommended, the especially designed centrifugal separator being all that is necessary or desirable for the average installation. The use of several impellers in series makes it possible to obtain any desired volume and vacuum with low peripheral speeds.

It is also characteristic of the machine that the desired volume may be delivered without changing the vacuum. This makes possible uniform results in all parts of the largest and highest buildings.

Sweeper Capacity—It should be borne in mind that the Spencer System provides a capacity of 2½ hp. per sweeper up to and including 30 hp. and above 30 hp., 2 hp. per sweeper.

Separators—The principle of centrifugal separation is standard on Spencer Systems. It has been found from actual tests that centrifugal separators will separate from 95% to 98% of the dust which is picked up by the cleaning tool.

Tools — Superiority of cleaning implements and accessories is universally acknowledged. Spencer tools are designed with openings in correct proportion to the rest of the system; also with special consideration as to convenience and fitness of the various requirements. Strong in construction, light in weight, and shaped for fast and effective work. Tools are equipped with Spencer universal controllable swivel, which enables operator to remove dirt beyond the reach of the rigid tool. All wearing surfaces are renewable. Tools are attached to handle by means of a convenient locking chuck.



5 Hp. Motor-Operated Vacuum Producer

Heavy Duty—Truck Type Cleaners

The Spencer portable truck machine embodies the same principles of design and construction as characterize the larger stationary equipment. These portable machines provide efficient vacuum cleaning that is comparable with the results of the Central System, where for structural reasons it is impractical to install the stationary plant. The equipment offers the maximum of power consistent with reasonable weight and ease of handling. Bulletin on request.



Carpet Cleaning

Boiler Flue Cleaning Apparatus

With special attachments available, the Spencer system can be used in cleaning horizontal return tubular and cast iron sectional boilers with a remarkable economy in fuel consumption.

Swimming Pool Cleaning Equipment

The use of Spencer cleaning equipment for swimming pools is most desirable since it permits the removal of sediment from the bottom of the pool without lowering the water level appreciably. Bulletin on request.

Engineering Service

The Engineering Department offers its services without obligation in recommending the proper size and type of equipment, piping layout, or other engineering details. Bulletins for Architects on request.

ESTABLISHED 1898

GARDEN CITY PLATING & MFG. CO.

Manufacturers of Adjustable Shelving Devices and Garment Carriers

1430 South Talman Avenue, CHICAGO, ILL.

NEW YORK OFFICE AND WAREHOUSE, 133 Wooster Street
REPRESENTATIVES IN PRINCIPAL CITIES

Products

"GARCY" HARDWARE for adjustable shelving; "GARCY" PULLOUT GARMENT CARRIERS for closets.

Also Keyhole Standards and Brackets for adjustable glass shelves.

GARCY
TRADE MARK REG.

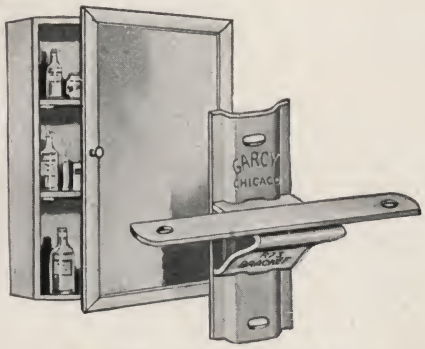
For our pages on Ornamental Metal Work, Display Case Frames, Grilles, Wickets, Bank Counter Screens, Bank Vaults, Cage Metal Work, and Lighting Reflectors, see Manufacturers' Index.

Hardware for Adjustable Shelving

Where Used—Wherever shelving can be used, "Garcy" Pilaster Strips and adjustable brackets provide easy and economical installation, and permit the utilization of space that is ordinarily wasted with stationary shelves.

Features—Shelves are easily and quickly moved up or down. Brackets snap in and out easily, yet cannot be budged under a load. They are tested up to 600 lb. The slots in the pilaster strips are numbered, making it easy to line up shelves.

Free Samples—Samples will be sent on request.



No. R73. For Narrow Shelves

Cross arm joined to No. P73 bracket. Requires but one pilaster strip instead of the usual two, at each end of shelves



Actual size

Finishes in Stock—Steel, white nickelplated is standard. This is a double plated, unusually durable nickel finish. The nickel is applied over a protective coating of copper.

Steel, statuary bronze plated also furnished from stock.

Nos. K73 and A73 are carried in stock in solid brass ready for finishing.

Nos. K73 and T73 are stocked in alchrom, a white, rust and tarnish proof aluminum alloy.

Adjustable Brackets—Nos. A73, T73, P73. Any bracket can be used with any standard.

PILASTER STANDARDS

No.	Width, in.	For adjustment, every	Stock lengths, feet
K73	7/8	1/2 in.	3, 4, 6, 12
H73	1 1/8	1/2 in.	12
B73	7/8	1/4 in.	12

Packed with nails. Screws furnished at same price.



Easily Adjusted—Always Secure

"Garcy" Pullout Clothes Closet Garment Carriers

Service—To permit the construction of orderly and space saving wardrobes in homes, apartments, hotels, clubs, etc.

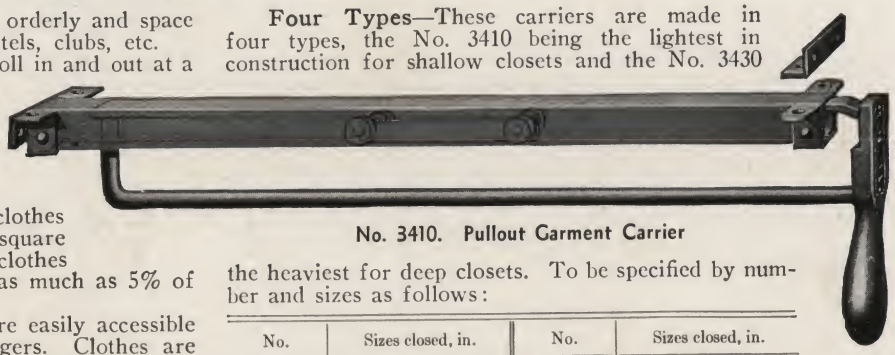
Construction Features—The carriers roll in and out at a touch smoothly and silently. They fasten with screws, either under the shelf or to the floor casing and rear wall.

Finish—Standard finish is statuary bronze. Nickelplated or other finishes can be furnished.

Advantages—"Garcy" pull out equipped clothes closets require only about half the space of square clothes closets, yet provide twice the clothes capacity. This saving in space amounts to as much as 5% of an entire building.

Garments are kept in good condition, are easily accessible and quickly found on their individual hangers. Clothes are selected in the light and air of the room. No need of groping for garments in a stuffy, dark clothes closet. Eliminates wiring for lights in closets.

Four Types—These carriers are made in four types, the No. 3410 being the lightest in construction for shallow closets and the No. 3430 the heaviest for deep closets. To be specified by number and sizes as follows:



No. 3410. Pullout Garment Carrier

No.	Sizes closed, in.	No.	Sizes closed, in.
3410	15, 16, 18, 20, 22, 24	3428	22, 24, 27, 30, 33
3402	27, 30	3430	30, 32, 36, 42, 48

HOEGGER, INC.

Manufacturers of Solid Brass Fittings for Clothes Closets

TELEPHONE
Palisade 6-8100

MAIN OFFICE AND FACTORY
532 Gregory Avenue, WEEHAWKEN, N. J.

NEW YORK, N. Y., Architects Samples Corporation, 101 Park Avenue

BALTIMORE, 12 W. Madison Street
BOSTON, 27 School Street
CHICAGO, 9334 Pleasant Avenue
HAMILTON, BERMUDA, Bank of Bermuda Bldg.
HARRISBURG, P. O. Box 112
KANSAS CITY, 308 Mutual Building
LOS ANGELES, 440 Seaton Street
MIAMI, 14 S. E. Seventh Street
NEW YORK, 101 Park Avenue
PHILADELPHIA, Terminal Commerce Bldg.

For Hoegger Bathroom Accessories, see Manufacturers' Index

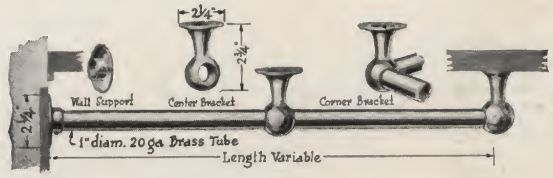
SLIDING GARMENT CARRIERS AND CLOTHES POLES

(Patent applied for)

HOEGGER Garment Carriers are made of solid brass, finished in the non-tarnishable Crodon. They are of sturdy construction and exemplify HOEGGER workmanship.

Clothes Poles, Sliding Garment Carriers, Shoe and Tie Racks are made any desired length to suit the requirements and arrangements of any type closet construction.

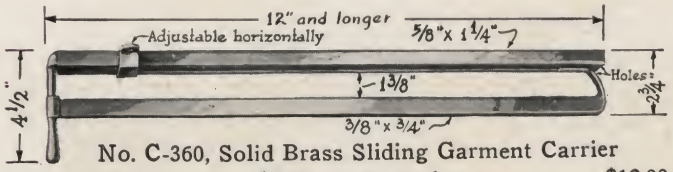
Complete details of these fixtures for any job will be sent on request by our Service Department.



Solid Brass 1-in. Round Clothes Pole and Fittings

1 in. Tubing	No. C-366, 20 gauge, per ft	$0.90
	No. C-367, 16 gauge, per ft	1.00
No. C-364, Wall Supports, per pair		1.20
Brackets	No. C-368, End, each	1.30
	No. C-369, Center, each	1.35
	No. C-370, Corner, each	1.35

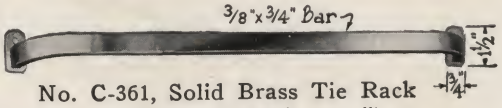
Note: Center brackets are only required for spans over 4 ft.



No. C-360, Solid Brass Sliding Garment Carrier

12 in. long	$8.00	20 in. long	$12.00
16 in. long	9.50	24 in. long	14.50

Other lengths furnished on order.

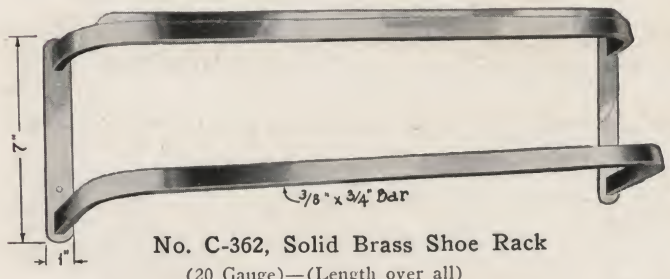


No. C-361, Solid Brass Tie Rack

(20 Gauge)—(Length over all)

16 in. long	$3.40	22 in. long	$4.20
20 in. long	3.70	24 in. long	5.00

Other lengths furnished on order.

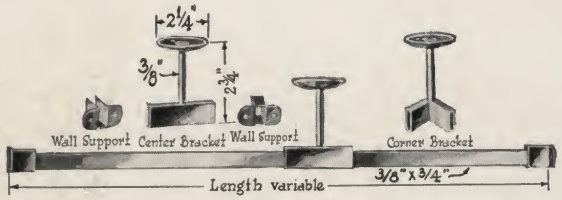


No. C-362, Solid Brass Shoe Rack

(20 Gauge)—(Length over all)

18 in. long	$6.50	24 in. long	$7.75
22 in. long	7.00	30 in. long	9.50

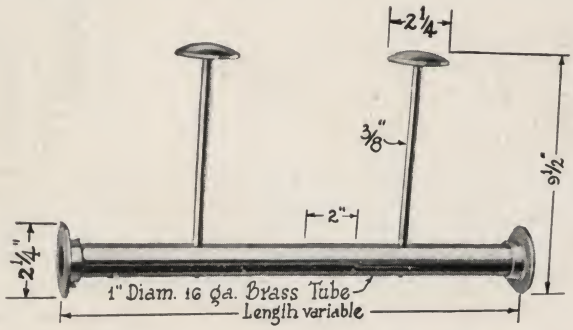
Other lengths furnished on order.



Solid Brass ⅜x¾-in., 20 Gauge Rectangular Clothes Pole and Fittings

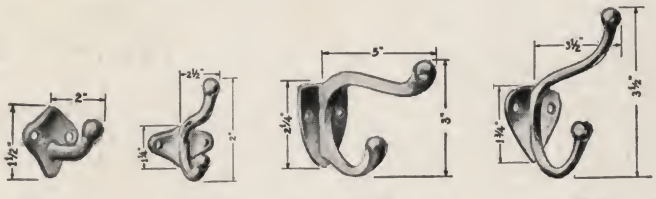
No. C-371, ⅜x¾-in. Tubing, per ft		$0.80
No. C-372, Wall Supports, per pair		.40
Brackets	No. G-373, Center, each	1.60
	No. C-374, Corner, each	2.25

Note: Center brackets are only required for spans over 4 ft.



1-in. Round Clothes Pole with Hat Holders

No. C-363, 1-in. Tubing, drilled, per ft		$1.20
No. C-364, Wall Supports, per pair		1.20
No. C-365 Hat Holder Pins, each		1.50



C-10 C-9 C-5 C-6

Crodon Hooks

No. C-10	$0.50	No. C-5	$1.60
No. C-9	.70	No. C-6	.70

CHASE BRONZE AND COPPER INSECT SCREEN CLOTH

CHASE BRASS & COPPER CO.

—INCORPORATED—

WATERBURY, CONN.

NEW YORK, N. Y., 80 Lafayette Street
BOSTON, MASS., 411 "D" Street
NEWARK, N. J., 361 Halsey Street
PHILADELPHIA, PA., 46 No. 6th Street
BALTIMORE, MD., 307 E. Lombard Street
PITTSBURGH, PA., 855 North Avenue, West

CINCINNATI, OHIO, 222 Post Square
CLEVELAND, OHIO, 5005 Superior Avenue
DETROIT, MICH., 2798 E. Grand Boulevard
CHICAGO, ILL., 1300 W. Harrison Street

MINNEAPOLIS, MINN., 145 No. 10th Street
ST. LOUIS, MO., 314 No. 2nd Street
NEW ORLEANS, LA., 429 Camp Street
LOS ANGELES, CAL., 210 Central Avenue
SAN FRANCISCO, CAL., 680 Second Street
SEATTLE, WASH., 1957 First Avenue, So.

Products

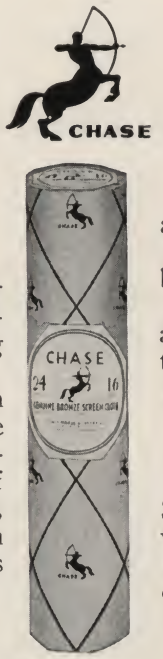
SCREEN CLOTH: Chase Commercial Bronze and Copper.

For Chase pages on Copper Roofing Materials and Door Saddles, Brass and Copper Pipe, and Copper Water Tubing, see Manufacturers' Index.

Chase Commercial Bronze Insect Screen Cloth

Is a most economical, non-rusting material for screening windows, doors and porches where quality, ultimate cost and permanence are controlling factors.

Chase Commercial Bronze Insect Screen Cloth is harder, stronger and more resilient and durable than pure copper cloth. Bronze cloth when released after having been bent under pressure of the thumbs, will spring back into its original flat, straight surface, whereas pure copper cloth when bent under even a moderate pressure remains permanently distorted.

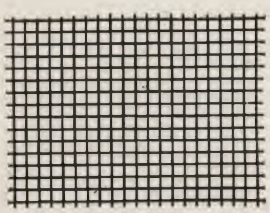


Antique Finish

In places where *bright* finish is undesirable Antique Finish, Chase Commercial Bronze Screen Cloth is an ideal substitute for the regulation bright bronze. The finish on this type of cloth gives it a very dark bronze color. *Antique* finish is produced by a special process which adds a permanent dark coating to the wire *before* it is woven into cloth, thus insuring uniform color. This process in no way detracts from the rust resisting qualities of the screen.

Chase Copper Screen Cloth

This cloth is exactly what its name implies: screen cloth woven from 99.9% pure copper wire that is drawn as hard in temper as it is possible to make. Copper of course is non-rusting and needs no painting. It does not give as good results as bronze where large surfaces are to be covered, owing to its softness and liability to damage and being stretched out of shape after it is installed. Chase Copper Screen Cloth is clearly and unmistakably labeled *"copper,"* or if the wrapping has been removed it can be readily identified by testing with the fingers for resiliency and strength.



16-Mesh Screen Cloth

Size of Mesh to Use

The term *mesh* is generally understood to mean the number of openings in a linear inch and that is the standard by which our screen cloth is manufactured.

16-mesh is used more than any other size because it gives better service in guarding against both mosquitoes and house flies.

14-mesh will protect against flies but will not bar out mosquitoes.

18-mesh is required in some tropical climates and close to Southern seashores, in order to protect against the extremely small mosquitoes and gnats that infest those localities.

Standard Widths

Chase Commercial Bronze Bright Finish Insect Screen Cloth is always available for immediate warehouse shipment in all *even widths* from 18 to 48 in., i.e., 18, 20, 22, 24, 26, etc. All of these widths are available in either 14, 16 or 18-mesh.

Antique Finish bronze cloth is also carried in all even inch widths from 18 to 48 in. in 14, 16 and 18-mesh. Chase Antique Bronze Screen Cloth can also be furnished in 54, 60, 66 and 72-inch widths in 16-mesh only.

Chase Copper Insect Screen Cloth is carried in stock in all *even inch* widths from 18 to 48 in. in 14, 16 and 18-mesh.

Other Uses for Insect Screen Cloth

Chase insect screen cloth is often specified to cover vents, fresh air intakes and ventilator guards to prevent the passage of snow.

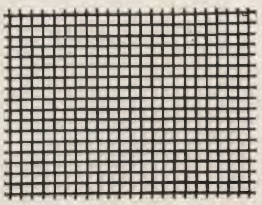
Extra fine meshes are usually specified for vision screens and bank window screens. Chase Copper wire cloth is availale for this purpose in 40, 50 and 60-mesh.

Specification

Insect Screens—The insect screen wire to be 16-mesh, commercial bronze as manufactured by the CHASE BRASS & COPPER Co.

All hardware to be solid brass or bronze.

Installation of screens to be made under direction of architect.



18-Mesh Screen Cloth

SELECTING THE RIGHT SCREENS

BRANCH OR DISTRICT OFFICE

CHAMBERLIN
METAL WEATHER STRIP COMPANY, INC.
DETROIT, MICHIGAN

CHAMBERLIN METAL WEATHER STRIP CO., INC.

Member of The Producers' Council, Inc.

GENERAL OFFICES
1254 LaBrosse Street, DETROIT, MICHIGAN

FACTORIES
DETROIT, MICHIGAN — PERU, ILLINOIS

A proper installation of either screens or weather strips requires expert workmanship as well as good materials. Such workmanship on every installation of Chamberlin equipment is assured to architects, contractors and owners by the coast-to-coast system of branch offices maintained by the Chamberlin company.

Contracts for Chamberlin screens or weather strips are made direct with the Chamberlin Metal Weather Strip Co., and the installation and servicing is done by qualified mechanics in the direct employ of the branches.

LIST OF BRANCH OFFICES OF THE CHAMBERLIN METAL WEATHER STRIP CO.

Atlanta, Ga., 625 Spring St. N.W., Hemlock 4850
Baltimore, Md., 404 St. Paul Pl., Vernon 7200
Boston, Mass., 134 Congress St., Hancock 3933
Buffalo, N. Y., 1744 Hertel Ave., Parkside 8876
Charlotte, N. C., 729 E. Trade St., 6506
Chicago, Ill., 704 So. Dearborn St., Harrison 4540
Cincinnati, Ohio, 907 Sycamore St., Cherry 3062
Cleveland, Ohio, 2010 E. 46th St., Henderson 4920
Columbus, Ohio, 219 E. Long St., Adams 2640
Dallas, Tex., 1405 No. Haskell Ave., 2-4481
Davenport, Iowa, 225 W. 4th St., Kenwood 1822
Denver, Colo., 1104 E. 18th Ave., York 0284
Des Moines, Iowa, 227 W. Grand Ave., 3-2201
Detroit, Mich., 1254 LaBrosse St., Cherry 8484
Harrisburg, Pa., 404 No. Second St., Bell 2-3216
Indianapolis, Ind., 11 W. 21st St., Talbot 1511
Jacksonville, Fla., 403 Park St., 5-4937
Kansas City, Mo., 400 E. Ninth St., Victor 4185
Los Angeles, Cal., 1072 No. Wilton Pl., Hempstead 1171
Louisville, Ky., 1384 Bardstown Rd., Highland 1000
Milwaukee, Wis., 518 E. Mason St., Marquette 6723
Minneapolis, Minn., 2633 Nicollet Ave., Regent 5231
Newark, N. J., 634 High St., Market 3-5320
New Haven, Conn., 52 Whitney Ave., 8-2577
New York, N. Y., 52 Vanderbilt Ave., Van. 3-4188
Omaha, Neb., 4003 Farnam St., HA-6565
Philadelphia, Pa., 127 N. 18th St., Rittenhouse 6277
Pittsburgh, Pa., 2123 Blvd. of Allies, Grant 3944
Portland, Ore., 385 Oak St., Broadway 2185
Providence, R. I., 42 Weybosset St., Gaspee 5013-4
Richmond, Va., 121 No. Third St., Madison 3-4547
St. Louis, Mo., 4230 Olive St., Jeff. 6200
San Francisco, Cal., 895 Post St., Franklin 8840
Schenectady, N. Y., 147 Jay St., 9712
Terre Haute, Ind., 125 So. 7th St., Crawford 5373
Toledo, Ohio, 127 No. Erie St., Main 1910
Washington, D. C., 923 New York Ave. N. W., National 3655

In addition to this list of branch offices, there are local representatives in 60 other cities.

PRODUCTS

CHAMBERLIN NU-STILE SCREENS—steel, bronze, aluminum for all types of windows. Construction details on pages 3 and 4. Installation details on pages 5, 6, 7, and 8.

CHAMBERLIN NU-ROLL SCREENS made in steel and bronze for all types of windows. Construction details on pages 9 and 10. Installation details on pages 11 and 12.

CHAMBERLIN FIREPLACE SCREENS.

CHAMBERLIN NU-STILE WINDOW VENTILATORS.

CHAMBERLIN METAL WEATHER STRIPS made of zinc, cold-rolled bronze, or spring bronze for every type of window and door.

CHAMBERLIN METAL SASH WEATHER STRIP for all types of steel casements, architectural, and factory projected sash.

CHAMBERLIN PULLEY COVERS for the lower sash pulley holes to reduce pulley hole leakage.

CHAMBERLIN PLASTI-CALK for sealing the openings around frames.

CHAMBERLIN IN-DOR-SEALS or automatic door bottoms for sealing the bottom cracks of interior doors.

CHAMBERLIN SIL-DOR-SEALS, or extruded polished brass threshold to weather-seal the bottom of every type of exterior doors. Special blueprint No. 800 sent on request.

CHAMBERLIN POLISHED BRASS KICK PLATES FOR DOORS (included in special blueprint No. 800.)

Selecting the Right Screens

The selection of the right screens for buildings is a matter of increasing importance to the architect. The architectural appearance of buildings may be enhanced or destroyed by the screens.

Originally considered as a health measure only, screens have gradually been improved to a point where efficiency, durability and appearance are given equal consideration in the selection of a complete installation.

The architect cannot always use his first selection; financial considerations sometimes prevent. A reasonable range of choices in material, design and prices is therefore necessary.

Chamberlin Nu-Stile Screens meet that necessity. Their wide range gives the architect and his client an adequate line from which to choose for special conditions or circumstances.

Chamberlin Nu-Stile Screens

Chamberlin Nu-Stile Screens are available in steel, bronze, and aluminum, as may be required for a particular building.

The Chamberlin Nu-Stile Steel screens are made of round edged, hot-rolled, cold drawn steel, completely rustproofed by Parkerizing and lacquering after the assembly of the frame, the attachment of hardware, and before the wire is received, thereby eliminating all unprotected edges and seams. There are two sizes of rails, $\frac{1}{4}$x$\frac{9}{16}$ and $\frac{5}{16}$x1 $\frac{1}{8}$ in.

The Chamberlin Nu-Stile bronze screens are made of solid extruded architectural bronze and are made in three sizes of rails, $\frac{1}{4}$x$\frac{9}{16}$ in., $\frac{5}{16}$x$\frac{3}{4}$ in., and $\frac{7}{16}$x1 in.

The Chamberlin Nu-Stile aluminum screens are made of 51 S.W. (hard alloy) extruded aluminum and are made in four sizes of rails, $\frac{7}{16}$x$\frac{5}{8}$ in., $\frac{5}{16}$x$\frac{3}{4}$ in., $\frac{7}{16}$x1 in., $\frac{7}{16}$x1 ½ in.

Maximum Strength
Maximum Protection
Maximum Ventilation

Chamberlin Nu-Stile steel, bronze, or aluminum screens have the corners electrically welded. An eccentric spline groove is rolled or extruded into the frame at the mill. It is not a machined groove, and there are no sharp corners to cut the wire.

The frame is wired by rolling the mesh into the eccentric grooves and securely locking therein with either solid copper or aluminum spline wire.

There is a choice of several widths in the three metals. Because of narrow rails and maximum strength, maximum ventilation is secured. Besides being adaptable to the usual window construction, the several different sizes of rails afford the opportunity of making attractive porch installations.

The Chamberlin Organization

The Chamberlin Organization is nation-wide. Established in 1893 to market the first practical weather strip, it has developed during the last 40 years into a national organization selling screens and weather strips through branch offices in 37 cities.

The present branch office system, which supplanted the earlier licensee method of selling in 1907, insures uniform service to architects, contractors and owners. Changes in personnel of agencies or offices do not affect the responsibility of the Company as installations are made by the Company direct for the purchaser.

Separate Contract Often Advisable

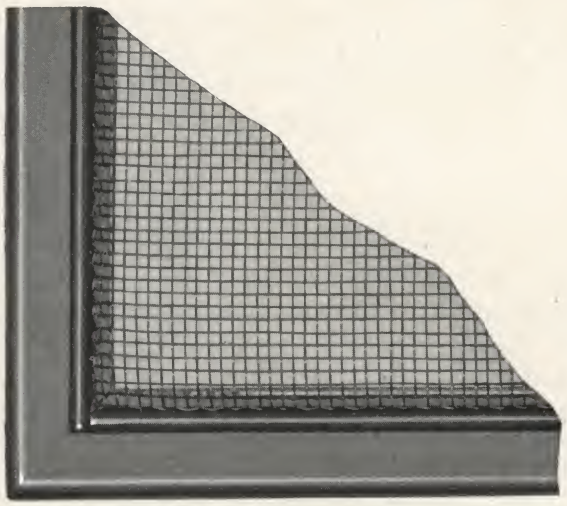
Because of the wide variety of screens which can be made to fit different types of windows and doors, it is sometimes a difficult task for an architect to clearly define in his specifications his exact wants. The Contractor must therefore be left with the responsibility of interpreting the intent of the specifications. For that reason, it is frequently advisable to omit from the general specifications the screen installation.

Suggested Procedure

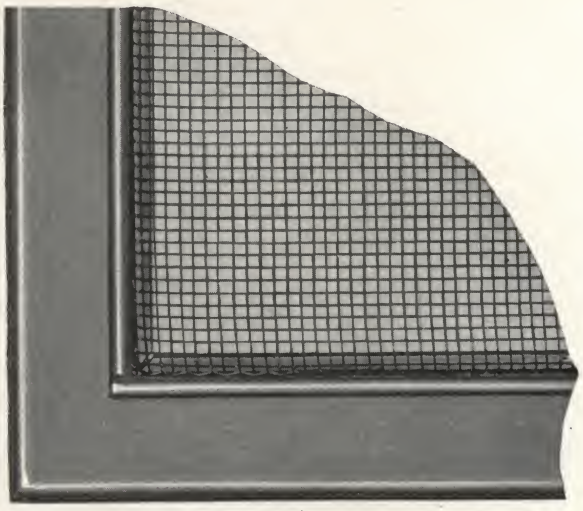
In laying out the plans for a particular building, the architect usually has in mind a definite sum which he considers as being sufficient to give an adequate screen installation. Our recommendation is that an allowance be made in the general contract for the sum which the architect has in mind, and that he then call in a screen expert to submit samples and suggestions for a complete installation.

This gives screen manufacturers the opportunity of submitting alternates which the architect may consider and discuss with his client. Frequently, because of changes in construction, the original specifications for screens do not adequately cover the changes.

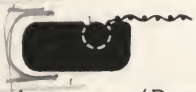
CHAMBERLIN NU-STILE SCREENS



Full size corner of 1/4x9/16-in. steel or architectural bronze screen showing welded seamless joint, method of wiring, resilient copper spline in eccentric groove.



Full size corner of 5/16x3/4-in. aluminum screen showing butt-welded corner construction and method of wiring.



Full size cross section of 1/4x9/16-in. Chamberlin screen rail furnished in both steel and architectural bronze. (Bronze frames in this size rail should not exceed 42 inches in any measurement.)



Full size cross section of 5/16x3/4-in. Chamberlin Nu-Stile aluminum screen rail.

Suitable for half or twin sliding screens of moderate size (under 20 sq. ft.).

The Chamberlin Nu-Stile Aluminum Screen, with 7/16x1-in. Rails for Screens Under 20 Sq. Ft.



Round edge section used for pivot side. (Full size.)

Dark finish aluminum wire is recommended for use in all aluminum frames.



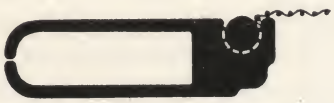
Open section used for sliding screens. (Full size.)

All aluminum frames are given a fine wire brush finish for uniformity.



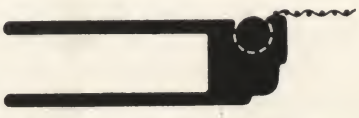
Closed section used for top and bottom rail of sliding screens, three sides of pivot screens and for stationary screens. (Full size.)

The Chamberlin Nu-Stile Aluminum Screen with 7/16x1 1/2-in. Rails for Screens 20 Sq. Ft. and Over



Round edge section used for pivot side. (Full size.)

This section with closed section (at extreme right) recommended for ornamental French doors.



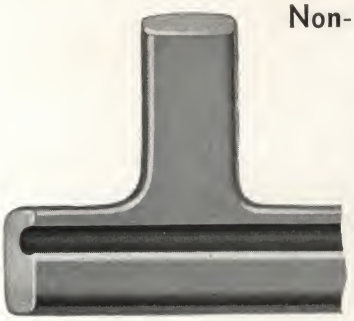
Open section used for sliding screen. (Full size.)

This section recommended for stationary porch screen panels with linking T astragal.



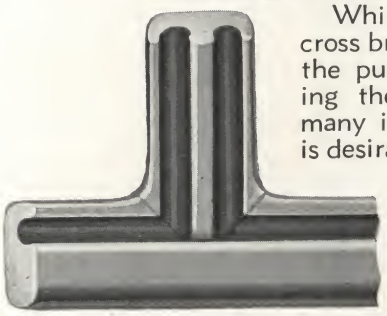
Closed section used for top and bottom rail of sliding screens, three sides of pivot screens and for stationary screens. (Full size.)

Non-rewirable Cross Brace



All screens over 54 in. in height or width are provided with a cross rail to strengthen the frame and no additional charge is made. Cross braces on smaller screens are furnished only when specified and an additional charge is made.

Rewirable Cross Brace



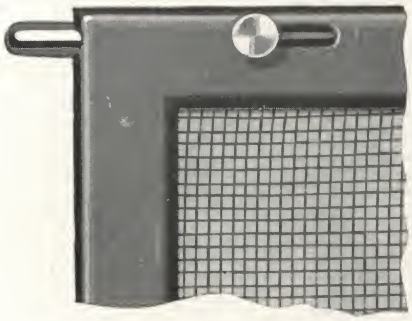
While in most cases a cross brace is used solely for the purpose of strengthening the frames, there are many installations where it is desirable to have both sections wired separately. This allows rewiring small sections when necessary and, in the case of large screens, those over 90 in. for instance, it prevents the wind whipping and sagging the wire cloth.

Handles and Numbers



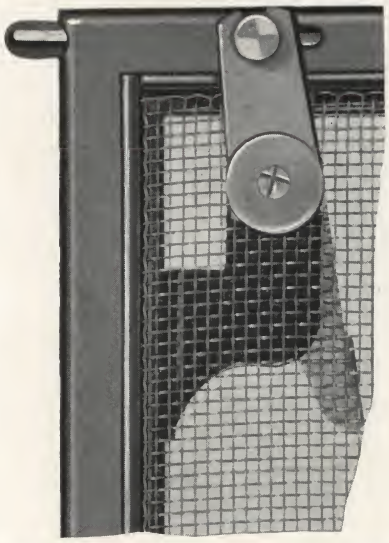
Full size view of rail with lift, also method of numbering. Chamberlin Standard procedure is to have all hardware, lifts, catches, etc., on steel screens made a part of the frame before rustproofing and lacquering and wiring, leaving no raw unprotected edges. On bronze and aluminum screens, catches, lifts, etc., are welded to the frame before finish and wire are applied.

Standard Pivot Assembly



In steel screens all drilling of holes, including those for the pivot assembly, is made before rustproofing and lacquering. This illustrates the standard pivot assembly for swinging screens. Wherever pivot screens are specified, this pivot assembly is considered a part of the screen itself.

New Pivot Assembly for Top Hung Screens



Full size view of new pivot assembly for top hung screens. In ordinary pivot assemblies, the button which operates the pivot assembly is so close to the stop that the stop has to be notched. This new assembly overcomes that difficulty and does not interfere with the rewiring feature of the Chamberlin Nu-Stile screens (this assembly furnished on all rails of steel, bronze, and $\frac{5}{16}$x$\frac{3}{4}$-in. aluminum screens).

Steel Screens Rustproofed after Manufacture

Architectural bronze and aluminum screens are, from the nature of the metal itself, rustproof. It is not always possible to use either bronze or aluminum. Steel screens, because of their lower price range, are more frequently used.

The Chamberlin factory is equipped with a complete Parkerizing plant and the Nu-Stile steel screen is completely Parkerized and lacquered before the screen mesh is rolled into it. All fasteners, hardware, numbers and screw holes are made before the screen frame is Parkerized. This is the only method that insures steel frames being as nearly rustproof as possible.

Screen Cloth

Unless otherwise specified, No. 16 mesh .0113 gauge Anaconda solid bronze antique finish wire mesh is used in steel and bronze frames. Aluminum wire is used exclusively in aluminum frames. Special meshes such as No. 18, 24, 30, 40, and 50-in. .0113 gauge and No. 16 mesh .015 gauge wire mesh are obtainable at additional cost.

Finishes

The Chamberlin Nu-Stile steel screens are regularly finished and lacquered in any desired color.

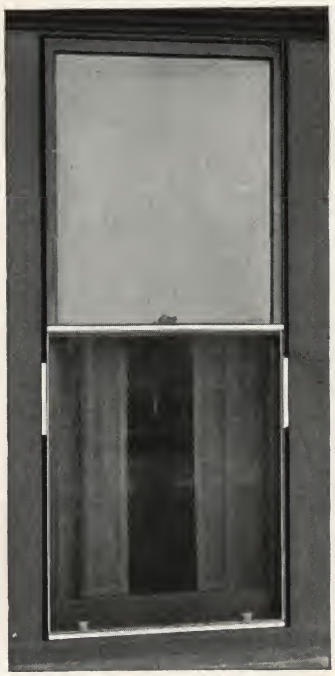
While we cannot guarantee to match absolutely any color finish, samples of the finish desired can be matched for practical purposes.

The Chamberlin Nu-Stile bronze screen after manufacture is oxidized statuary bronze and lacquered with one clear coat of lacquer.

The Chamberlin Nu-Stile aluminum screens, as regularly furnished, are given a brushed finish and one coat of clear lacquer.

SCREENS FOR DOUBLE HUNG WINDOWS

Double hung or sliding sash are screened either with vertical sliding, top hung, pivot full length, or rolling screens. Vertical sliding is most popular but there are many cases where top hung or rolling screens are preferable. The selection depends largely on the effect desired by the architect.



Single Sliding Vertical Screens—Single sliding vertical screens are most popular and least expensive. Except in the case of large windows, one single frame supplies the screening for the lower sash when it is open. When top sash ventilation is desired, the screen slides easily over the upper sash opening.

Chamberlin Nu-Stile screens are furnished with two distinct types of guides—one in which the guide holds the screen by means of spring tension in the side of the guide, or one which has no spring but holds the screen frame with spring attached to frame.



Twin Sliding Screens—Twin sliding screens are rapidly becoming popular as a method of screening double hung or sliding windows. Where the architectural details allow sufficient room on the blind stop, an attractive installation can be made. The sash can be open both top and bottom to provide both upper and lower ventilation. Both screens can be operated and removed easily for cleaning and storage purposes. Springs in guide or on screen frames optional.

Top Hung Screens—Using top hung screens is another practical method of screening double hung or sliding sash. The new Chamberlin pivot assembly insures ease of installation and removal. Top hung screens allow both top and bottom sash to be opened. They can be swung out to wash windows or adjust awnings. Guides are ordinarily not required, the new pivot assembly taking care of all the hardware excepting the fasteners. These may be the regular hook and eye or a thumb lock on lower rail of screen frame. In case of large screens, cross rails can be placed opposite the meeting rail of the window without detracting from their appearance.



Rolling Screens—Another new and popular method of screening double hung windows is by means of the Chamberlin Nu-Roll screens. If designed in advance, the screen housing may be entirely concealed and the screen guides serve as stops. Where not designed in advance, the screen housing is placed at top of lower sash runway. In both cases, window stops may be divided or set to make installation partially invisible.



Complete details of construction of Chamberlin Nu-Roll Screens are furnished on pages 9, 10, 11 and 12.

The illustrations showing single sliding, twin sliding, and top hung screens are all of the $\frac{1}{4}$x$\frac{9}{16}$-in. rails, but the Chamberlin Nu-Stile screens are made similarly for all the rail sections shown on page 3.

SCREENS FOR CASEMENT WINDOWS

Casements In-Opening—Casement windows generally present a variety of methods for efficient screening. With in-opening sash, however, outside stationary screens are most practical and comparatively inexpensive, although the windows can be equipped with either top hung or pivot installation, which may be single or double, vertical or horizontal.

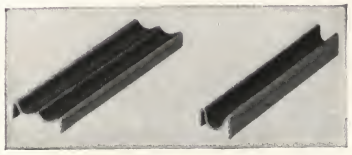
Casements Out-Opening—Out-opening windows present greater difficulties for the architect or homeowner than the in-opening because of the necessity of considering drapes or shades. For that reason, the rolling type of screen has become more popular. (See pages 9, 10, 11 and 12.)

Pivot Screens—Pivot Screens are suitable with out-opening casements where they do not interfere with draperies and curtains. Screens are easily attached and removed with the Chamberlain Nu-Stile narrow rail and they do not detract from the appearance of the window.

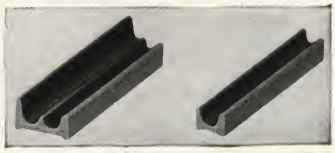
For windows high and narrow or several windows used in one frame opening, the twin sliding arrangement is usually used.







Guides for horizontal sliding screens may be made of cold rolled bronze or extruded architectural bronze



SCREENS FOR BASEMENT SASH

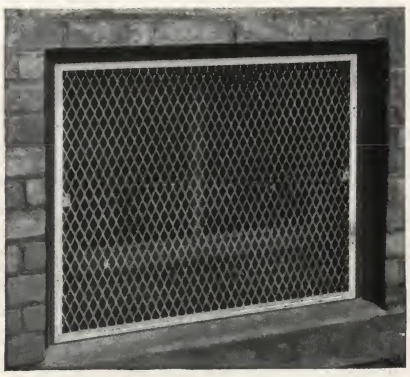
Careful consideration is now given to the proper screening of basement windows. Not only is insect protection necessary when the windows are open for ventilation, but the exclusion of petty thieves and kidnappers is important.



Basement window equipped with Chamberlin Nu-Stile Steel Screen without guard wire. Basement screens are subjected to very severe rust exposure—the solid, parkerized, lacquered frame insures long life



Basement window equipped with rewirable ½x1-in. bronze mesh in double groove Nu-Stile Steel Frame Screen. One groove holding guard wire, the other groove holding the screen mesh

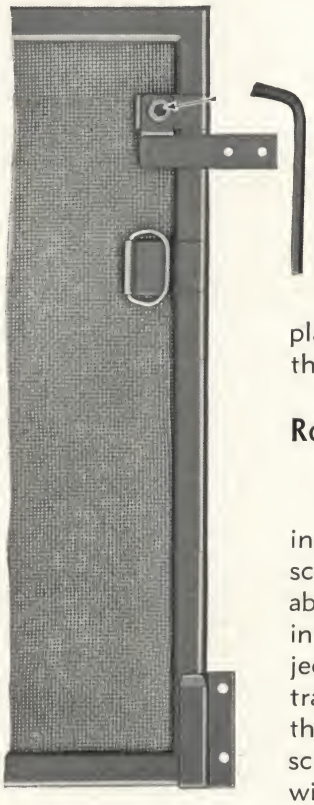


Basement window equipped with standard Chamberlin Nu-Stile Steel Frame Screen and protected with an additional frame which contains expanded metal 1-in. diamond mesh

SCREENS FOR PROJECTED SASH

Chamberlin Nu-Stile screens of steel or aluminum are readily adaptable to all types of projected sash, both architectural, commercial and factory type. When ventilators swing in, the most practical arrangement is a semi-stationary screen which can be set in place and removed from the inside of the building and held in place by means of guides or spring clips.

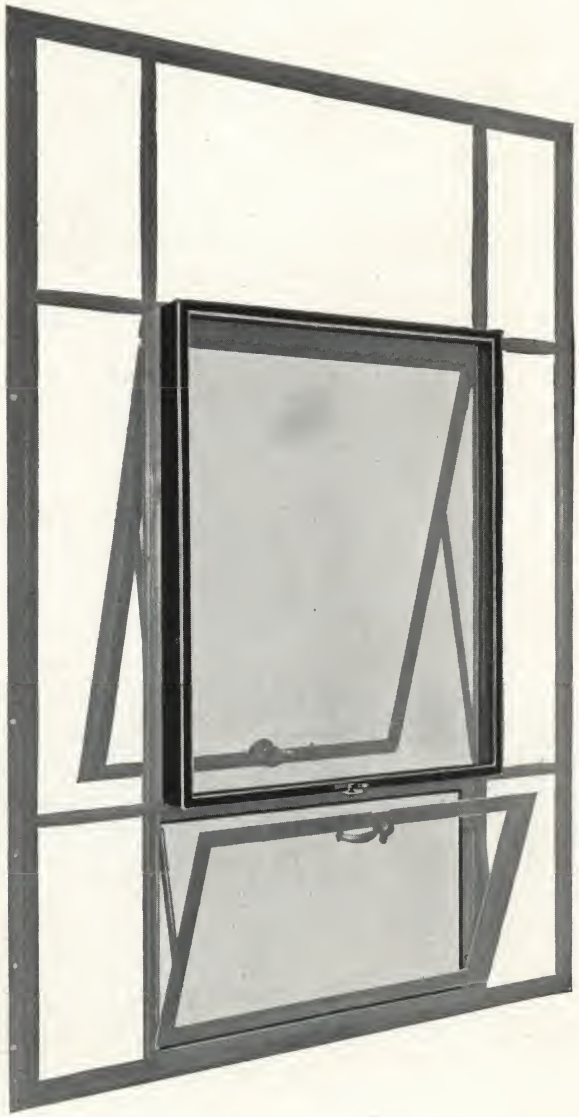
When ventilators swing out, a special box frame is attached and secured to the sash frame. On this frame is fixed either a pivot or top-hung Nu-Stile screen. (An optional arrangement consists of using roll screen in the box frame.)



On institutional buildings, where it is desired that only properly designated persons may set or remove the screens, a special locking arrangement is provided. The sash is set in place from the inside of the building and once locked in place is removable only by the use of a special key.

Roll Screens for Projected Windows

For offices and other buildings, where top hung or pivot screens are not readily adaptable, a roll screen can be used in connection with the projected out-opening sash. Extra deep guides which permit the operation of the roll screen without interference with the ventilator hardware and a special stool are furnished to completely close the opening.

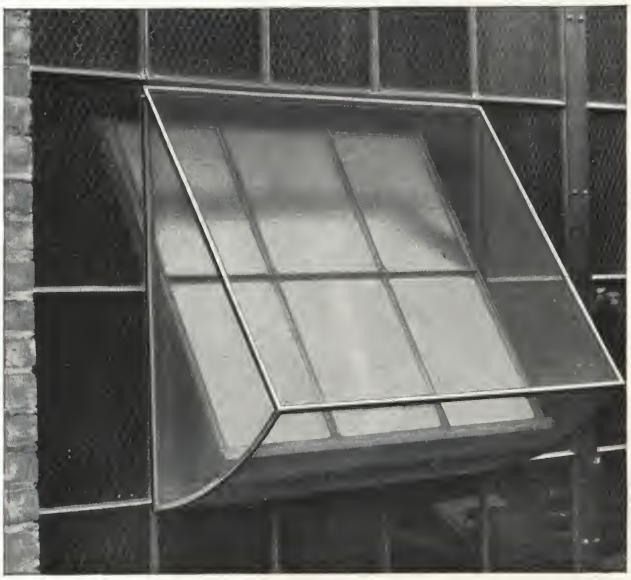


Projected Sash with Both In-opening and Out-opening Ventilators
(Each ventilator is screened separately as explained above)

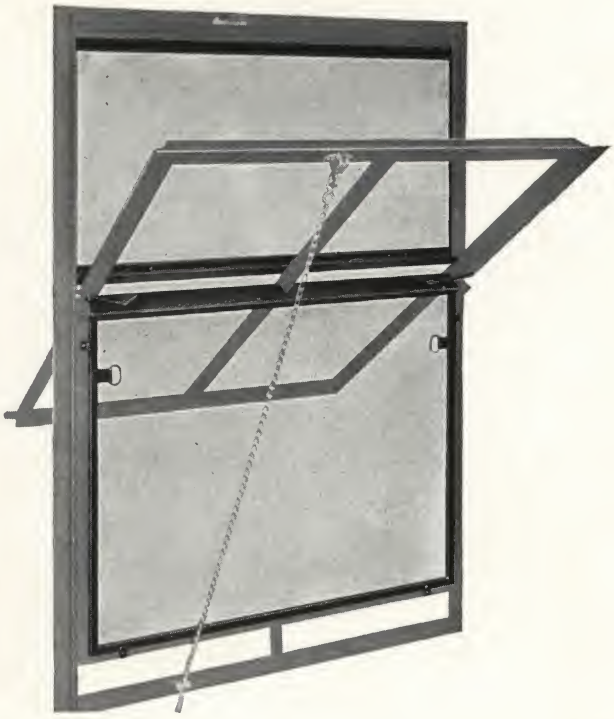


SCREENS FOR FACTORY TYPE PIVOT SASH

Factory Type horizontal pivot sash may be screened with either a box, cage screen or two individual screens, which, with special hardware, allow the sash to be operated without interfering with the screening arrangement.



The Chamberlin Nu-Stile Screen is adaptable to all the designs which may be required for special installation. The screen can be made in bows, or circles, or any special design. The cage screen as shown on this factory type sash illustrates the adaptability of the Nu-Stile screen.



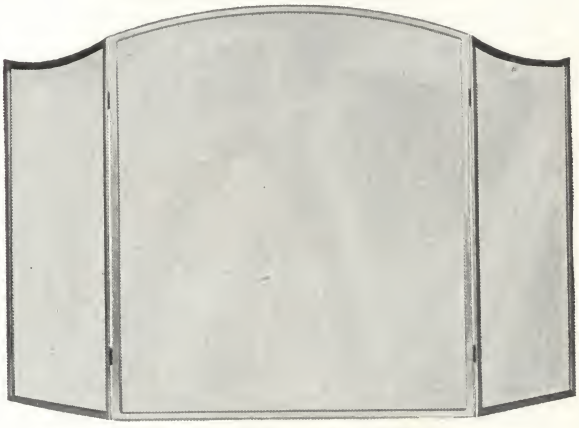
To comply with the demands for a screen which does not take up the same amount of room as a cage screen, and which requires less storage space during the winter season, this special hardware arrangement has been made. Both screens stationary with baffles at meeting rails.

NU-STILE FIRE SCREENS

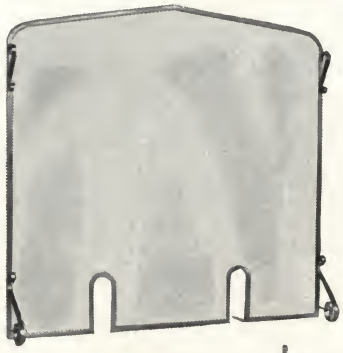
No single item lends so much distinction to a room as a Chamberlin "Nu-Stile" fire screen. Custom built or standard type, "Nu-Stile" fire screens conform to the same high quality of material and workmanship which have been synonymous with the name of Chamberlin for 40 years.

Three of a variety of styles, materials and finishes to harmonize with the decorative scheme of any room are shown below. Outstanding structural features which distinguish all Chamberlin Nu-Stile fire screens are included in our special catalogue.

This special catalogue on fire screens will be mailed on request.

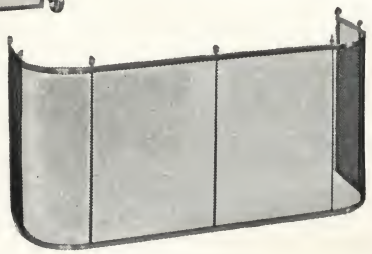


Three-panel Screen No. 3260G
Center Panel 26x30⅛ in.
Wings 12½x28 in.



Spark Arrester No. 137G
Width 36¾ in. Center height 33½ in.

When ordering 137G (with andiron slots) or 137GP (without andiron slots) supply template with shape, width and height of opening.



Fender

No.	Length, in.	Height, in.
136F	36	15 or 18
142F	42	15 or 18
148F	48	15 or 18
154F	54	15 or 18

NOTE—Specify in ordering:

BRASS
(a) Polished or Antique
(b) Smooth or Wrought

STEEL
(a) Swedish or Lacquered
(b) Smooth or Wrought

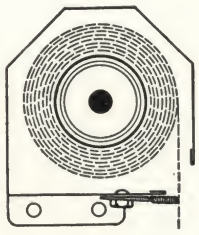
CHAMBERLIN NU-ROLL SCREENS

Chamberlin Nu-Roll screens represent the experience of many years of screening to secure a practical installation. Rolling screens generally are preferred by many architects and homeowners because:

(1) They are convenient.
(2) They eliminate the annual trouble and expense of installation, storage and repair.
(3) They furnish maximum screening service by being available or out of sight as desired at a moment's notice.
(4) They operate like window shades.
(5) They store themselves in clean, dry and weatherproof housings.
(6) They simplify the hanging of draperies and curtains.
(7) They eliminate wear and tear on drapes, usually a problem with inside screens.
(8) During rains, when windows are closed, rolling screens are easily raised to eliminate the spattering of rain through dusty screen wire.
(9) When windows are closed, roll screens being raised out of sight assure the maximum amount of daylight and do not distort the vision.
(10) Under-sill sash operators are unnecessary.
(11) Windows are easily accessible for cleaning purposes.
(12) Awnings can be operated from the inside.

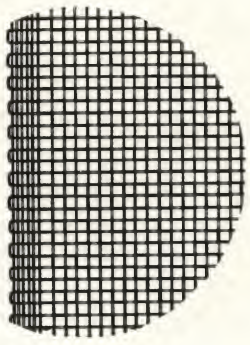
Construction and Installation

Chamberlin Nu-Roll screens are made of bronze and Parkerized steel. The Chamberlin bronze screens are made of solid (not plated) cold-rolled bronze, oxidized or antique finished. Bronze metal is attractive and harmonizes with most color schemes. The Nu-Roll screen, when made of steel, is made of cold rolled steel heavily Parkerized against corrosion and spray lacquered in any color desired.



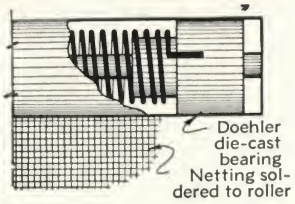
Housings

Screens under 70 in. in height have a box housing 2 in. in diameter; when over 70 in. in height, the box is 2¼ in. in diameter. The wire cloth opening in the box has hemmed edges and a heavy weatherproof felt baffle (an exclusive Chamberlin feature) to clean wire during operation and to keep insects out of housing.



Wire Cloth

Made of specially annealed, non-crystallizing, 16-mesh solid bronze acaconda wire with five extra strands for selvage reinforcement. The full width of the upper edge of the cloth is soldered to the roller.



Roller

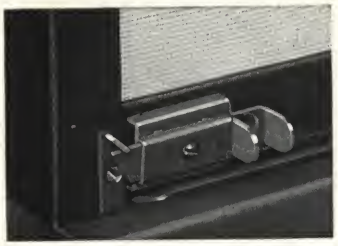
Roller, 22-gauge, solid brass tubing, perfectly aligned and revolving on ¼-in. rolled steel shaft. Wire cloth netting is soldered to brass roller. Roller is packed with a special protective lubricant having a 300-degree melting point.

Bearings

Special Doehler die-cast, rustproof bearings at each end of roller to insure smooth rolling and to prevent binding.

Springs

Springs run entire length of roller; are adjustable for tension and made of specially drawn oil-tempered wire, enclosing an auxiliary spring tube to prevent binding of the main spring on shaft.

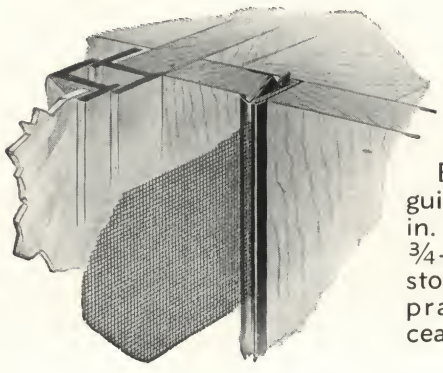


Operating Bar and Catch

A rigid, two-piece, flanged adjustable type, provided with automatic or spring bolt side catches. A weatherproof welt insert between the operating bar and window stool avoids damage to the stool and keeps out all insects.

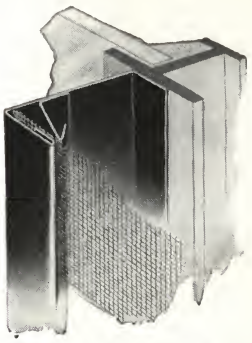
Guides

Channels $\frac{15}{16}$ in. deep and can be concealed between ¾-in. divided wood stops. Guides are made of two members—one member rigid, one of spring metal (an exclusive Chamberlin feature) to hug the netting. This insures insect tightness, smooth and uniform operation and prevents the screen from slamming up against the housing. This spring member is adjustable in tension to hold drawbar at any desired point. The rigid guide member automatically interlocks with the drawbar at all times.



Concealed Installation of Guides

By installing the guide, which is $\frac{15}{16}$ in. deep, between ¾-in. divided wood stops the guide is practically concealed.

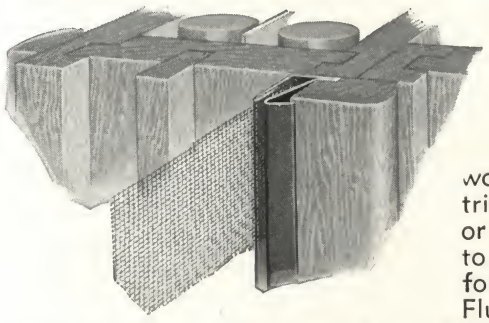


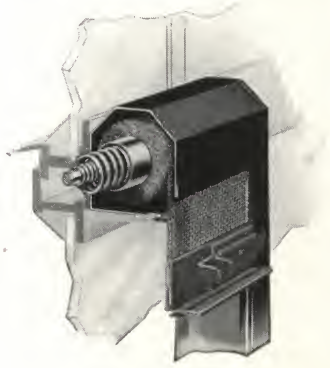
Visible Installation of Guides on Steel Sash Frame

The two-angle member of the Chamberlin Nu-Roll Screen guide is made of spring bronze. This member prevents the operating bar of the screen from slamming up against the housing when the screen catch is released. With an up and down motion of the screen it also deflects the selvage edge of the screening back into the guide whenever the netting is accidentally pushed out.

Guide Acts as Inside Stop

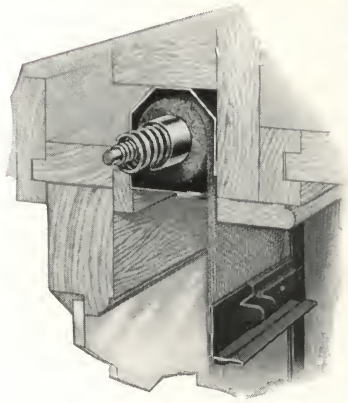
A No. 10 guide is used for double hung Nu-Roll screen installations. This guide is mounted on the frame, as shown, acting as the inside stop for the lower sash. The regular wood stop is trimmed down or moved away to make room for the guide. Flush type sash lifts are necessary to prevent interference with roll screen draw bar.





Housing Mounted on Transom Bar

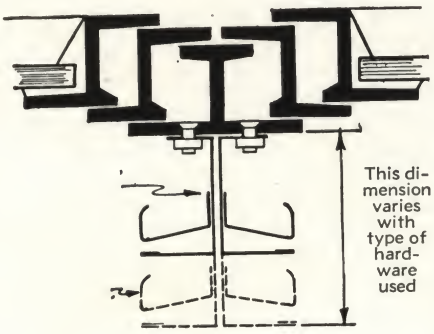
The design and compactness of the Chamberlin Nu-Roll Screen housing permits a neat and unobtrusive installation at the transom bars of steel casements. This means screening ventilating sash only, eliminating the handling of an unnecessarily large screen, avoiding fly pockets and saving money.



Concealed Housing

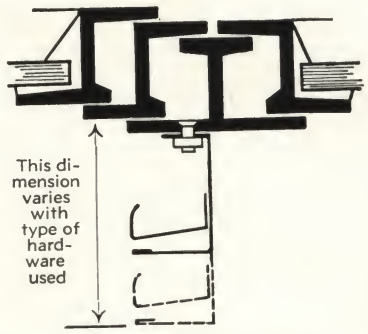
This drawing illustrates the simple manner in which the frame head can be detailed to permit a concealed installation of the housing in the case of either casement or sliding windows.

Details of Guide Application



Where two or more vents are used in one opening, each of which operates separately, two roll screens may be used. Here the separate guides are placed back to back and so securely fastened to the steel frame.

Where it may be necessary and desirable to screen only one vent in a two-bay opening, to eliminate a fly pocket, and maintain maximum visibility, the screen guide for the screened vent is securely fastened to the steel jamb as illustrated.



Dimension Notation

The successful application of Nu-Roll Screens to different types and conditions of steel sash, and different types and dimensions of steel sash hardware, requires several and varied types of screen guides.

The dimension notation above simply means that if a two-sash bay is to be screened with a single screen, the deeper guide is necessary to permit the screen to clear the hardware if one sash is to be closed when one is open. A 5/8-in. clearance must be allowed on steel jamb for bolting screen guide to frame.

Special Note: A single screen can be used on a two-sash bay, but a separate screen for each sash eliminates the formation of a fly pocket, and is, therefore, a more satisfactory arrangement.

Details and Illustrations

Illustration of Nu-Roll Screen for Double Hung windows is shown on page 5, projected steel sash on page 7, and out-opening sash, residence type, on page 11.

Architectural details for typical installations shown on pages 11 and 12. For full size detail of these details and others not included in these pages, write General Office at Detroit, or nearest branch (see page 1).



Out-opening single casement fully ventilated. Chamberlin Nu-Roll Screen mounted at head.

Guides can be attached to steel frames (with plaster reveals), or mounted on or concealed by wood trim

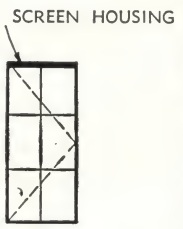


Two single out-opening casements with fixed transoms. Two Chamberlin Nu-Roll Screens mounted at transom bar. (Optional arrangement would permit one full width screen mounted at transom bar or at head of frame)



Out-opening single casement with fixed transom. Chamberlin Nu-Roll Screen mounted at transom bar

TYPICAL OUT-OPENING STEEL CASEMENTS WITH RECOMMENDED EQUIPMENTS AND MOUNTINGS FOR CHAMBERLIN NU-ROLL SCREENS



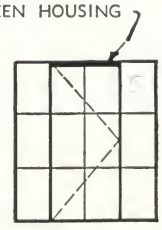
Single Casement Fully Ventilated
Use single Nu-Roll screen at head



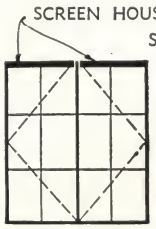
Single Casement with Fixed Transom
Use single Nu-Roll screen mounted at transom bar



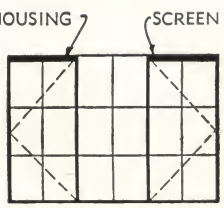
Single Casement with Hinged Transom
Use single Nu-Roll screen mounted at head



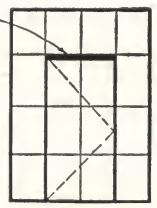
Single Casement with Fixed Side Lights
Use single Nu-Roll screen over casement only



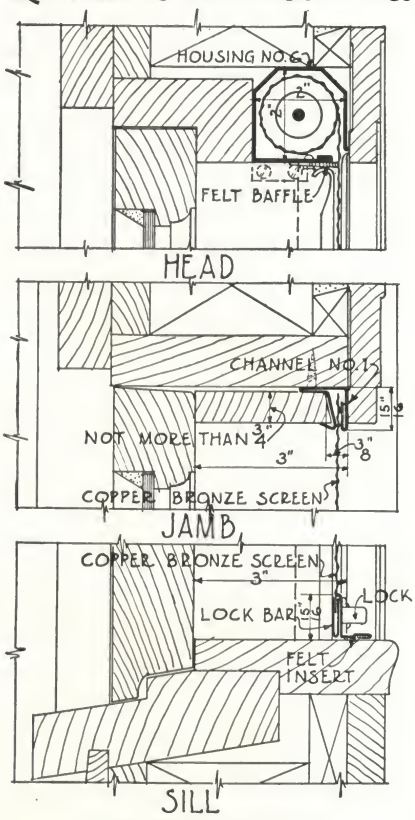
Two Single Casements or One Double Casement Fully Ventilated
Recommended use of two single Nu-Roll screens, optional one double Nu-Roll screen



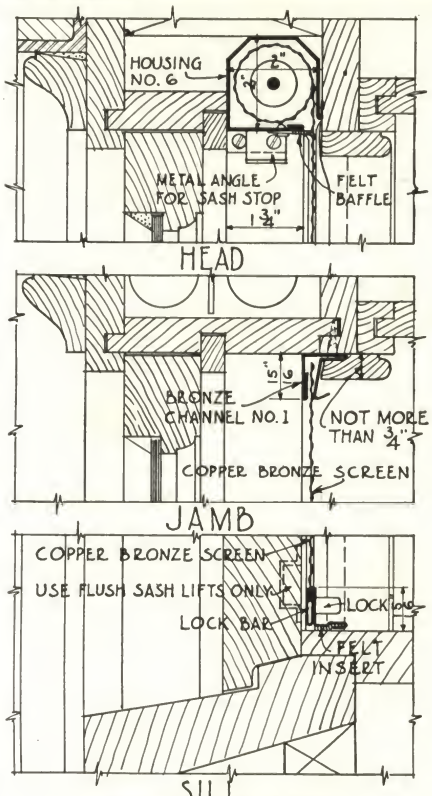
Two Ventilated Casements with Fixed Sash Between
Use two single Nu-Roll screens over casements only



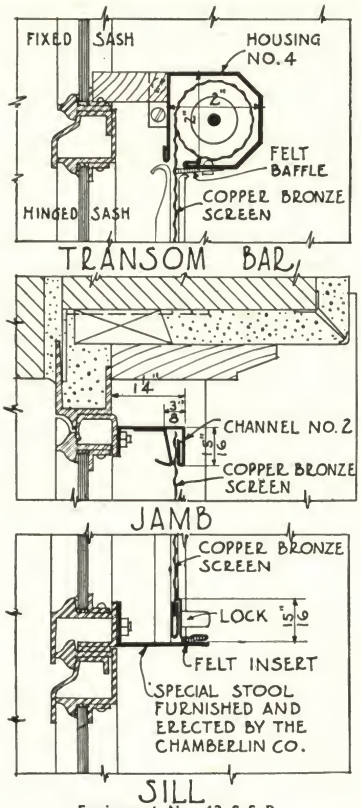
Single Casement with Fixed Side Lights and Transoms
Use one single Nu-Roll screen mounted at transom bar screening ventilator only



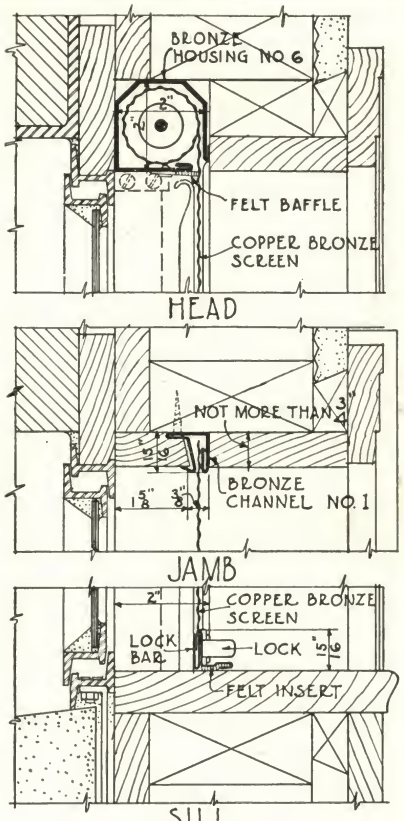
Equipment No. 61 W-W
Concealed installation on out-opening wood casement



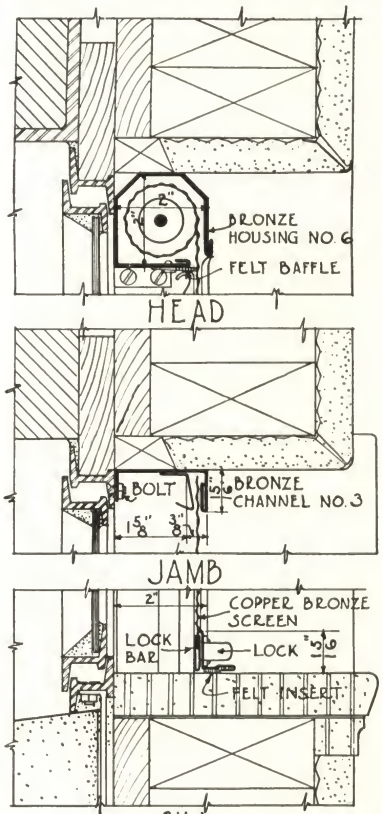
Equipment No. 61 R-W-W
Concealed installation on a wood double hung window



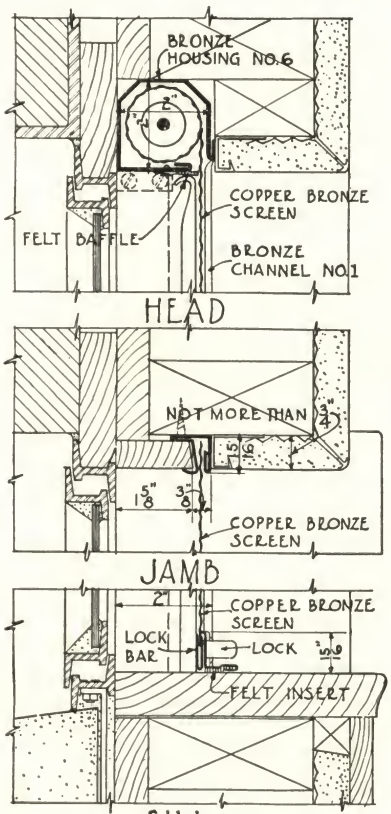
Equipment No. 42 S-S-P
Visible installation on steel projected window



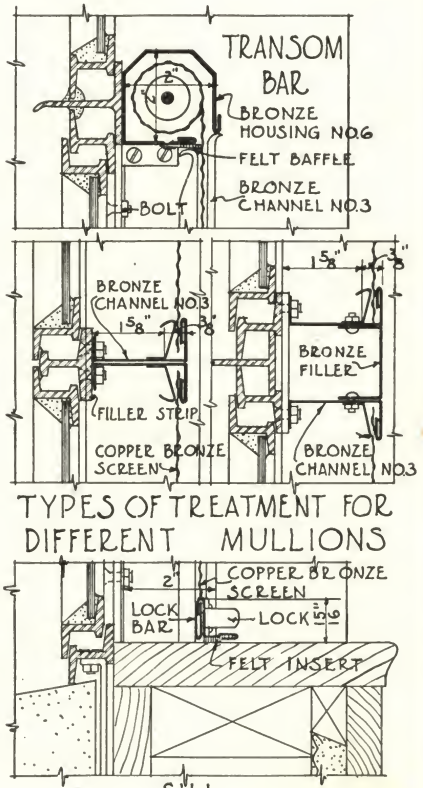
Equipment No. 61 S-W
Concealed installation on out-opening steel casement



Equipment No. 63 S-S
Visible installation on out-opening steel casement.
Note: Mounting independent of plaster reveals



Equipment No. 61 S-W
Concealed installation on out-opening steel casement.
Note: Mounting independent of but concealed by plaster reveals



Equipment No. 63 S-S-T
Visible installation on steel frames with multiple sash and fixed transom in out-opening steel casement

SELECTING THE RIGHT SCREENS

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METAL WEATHER STRIP COMPANY, INC.
DETROIT, MICHIGAN

THE CINCINNATI FLY SCREEN CO.

CINCINNATI, OHIO

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CINMANCO ALL-METAL REWIREABLE FLY SCREENS for every type of window and door opening; "E-Z" SLIDE WOOD FRAME SCREENS; and WOOD and METAL FRAME SCREEN DOORS.

The Company

This company has had over forty years' experience in building fly screens. Thousands of satisfied customers will attest to Cinmanco's reputation and integrity.

Service and Facilities

A highly specialized field organization has been developed to assist architects with their screen problems. The large, modernly equipped plant of THE CINCINNATI FLY SCREEN CO. and its ideal, central location assure prompt deliveries.

Cinmanco All-metal Screens

(.025 and .032-in. Thick Metal)

Cinmanco All-metal Screens are made of bronze, aluminum, or galvanized copper-content steel strip. These frames are tubular in construction, assembled on correct mechanical principles, and spot-welded. Cinmanco All-metal Screens can be furnished in a large variety of types and finishes to suit the particular requirements —vertical, horizontal, sliding, hinged, basket, circle, segment top, bow, or any shape desired.



Horizontal Sliding Screens

Cinmanco treatment for wide casement or porch openings, resting on sill or rail. Roller bearing allows 1¼ in. for metal frame screens, and 1¾ in. for wood frame screens in total width on stool

Features—***Rewireable***—The screen cloth is securely held in the groove by a rounded spline that will not cut the cloth. This spline can easily be removed for rewiring the screen.

Reinforced—Frames are sturdily reinforced by inside metal angles.

Detachable Springs—Easily removed and renewed.

Bronze Wire Cloth—Cinmanco genuine 90% copper, rustless, bronze wire cloth, 16-mesh, is regularly furnished. Other meshes as specified.

Screen Doors

Wood—Cinmanco Screen Doors are made of carefully selected, well-seasoned lumber—white pine, oak, cherry, mahogany, walnut, or other woods, as specified.

All doors are 1⅛ in. thick (unless otherwise ordered), mortised, glued, and wedged. Special care is given to produce a superior door in every respect. Highest quality paints, stains, and varnishes are used, all carefully rubbed down.

Hollow Steel, Bronze, Aluminum and Nickel Silver—Cinmanco All-metal Screen Doors are built for permanence. Corners and joints are fully welded, resulting in a rigid, one-piece construction that eliminates all possible twist and assures perfect fit under all conditions.

Especially adapted for casement doors where narrow stiles are desired.

Cinmanco Doors are furnished with 16-mesh bronze wire cloth, and special bronze locks, hinges, and flush bolts. Steel doors can be supplied in colors or grained finish to match any woodwork; bronze doors, in natural bronze or light to dark statuary finish.



Cinmanco Hollow Metal Screen Doors

Screen Door Grilles

A wide variety for selection.

Screen Door Hardware

The mortise door latch is solid bronze and can be furnished in a variety of finishes. Five knuckle, steel bushed, loose pin bronze butts, or sherardized steel plated butts can be supplied.

"E-Z" Slide Wood Frame Screens

The corners of the "E-Z" Slide Wood Frame Screens are securely framed together by interlocking concealed mortise and tenon joints, glued and securely wedged. This construction gives the greatest possible strength and makes the joints impervious to the weather.

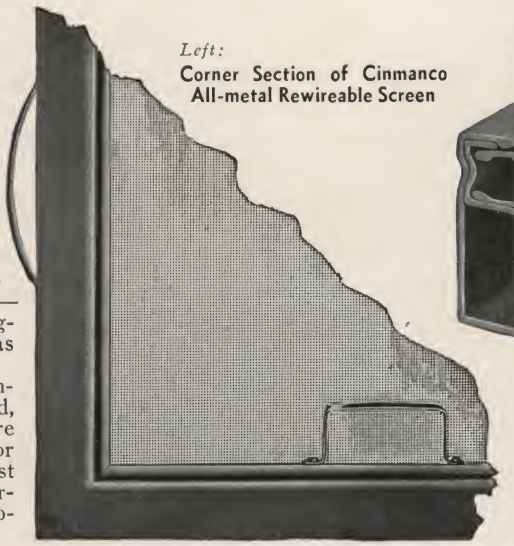
The springs used in the wood frame screens are elliptic in shape and are made of steel clock spring; they will last as long as the screen itself.

The wire cloth is attached to the screen frame by means of a groove and lock strip that keeps it perfectly tight and smooth. Its holding powers are equal to the strength of the wire itself. By this method the screens can easily be rewired.

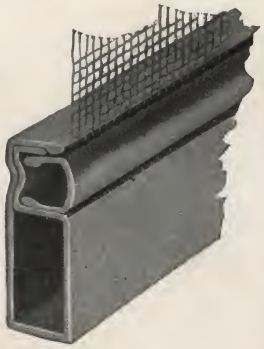
Zinc metal or wood guides are furnished with this equipment.

Sleeping Porch or Solarium Screens

Made to harmonize with the surroundings.



Left:
Corner Section of Cinmanco All-metal Rewireable Screen



Above:
Actual Size, Cross Section of Cinmanco All-metal Rewireable Screen



Right:
Section of Aluminum Rewireable Screen

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Complete specifications and information upon request.

The Corry Organization

The Corry Metal Corporation offers the latest improvements in screening doors and windows for residences, institutions or industrial buildings. Our organization is composed of experienced screening engineers who will assist architects in planning, building and installing all types of residential, institutional and industrial door and window screens.

We invite you to consult us or our sales agents on any screen installation you are contemplating. Corry Sales Agents are thoroughly skilled and competent to give expert advice in meeting particular needs and solving complicated problems.

Corry Patrol Metal Screens

Corry Patrols in metals. They set a new standard of convenience and beauty, and represent important developments in screening efficiency.

These all-metal door and window screens combine beauty with lasting efficiency. They represent fine metal cabinet and drawn work, skillfully formed and welded into one piece.



Trade-Mark Registered

Expert finishers produce beautifully grained wood effects to match any color scheme or attractive and pleasing effects in bronze may be had in a wide range and variety of plated finishes.

Undeniably, Corry Patrols, whether stationary or roll types, are distinctive in appearance, and indicative of quality in every respect.

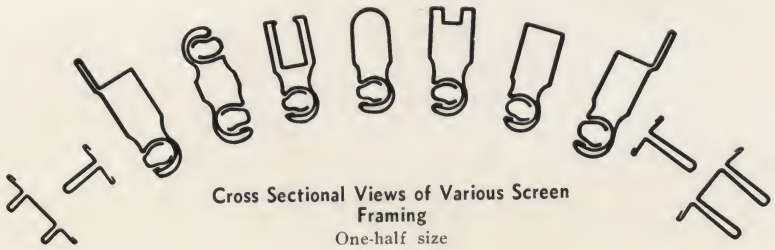
Specifications—Metal Frame Window Screens

Window screens shall be of hollow tubular construction with frames 1⅛ in. wide, $\frac{7}{16}$ in. thick by not less than .028 cold rolled electro galvanized steel (electro-galvanized in the flat and after fabrication), or best grade commercial bronze. Frames shall be welded at corners and continuously along the frame to assure maximum strength and rigidity. All corners shall be reinforced (internally) with L-shaped reinforcements of not less than .037 gauge material (to match framing) extending into frame not less than 2 ins.

Screen cloth shall be not less than 16 meshes (other finer meshes if desired) to the inch of genuine commercial bronze wire. Cloth shall be held in groove of screen framing (wiring edges to be well rounded) with resilient slotted metal spline which can be readily removed and replaced for the renewal of cloth.

Metal Door Screens

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Cross Sectional Views of Various Screen Framing
One-half size

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Army Medical School, Walter Reed Hospital, Washington, D. C.
C. P. Dubbs Residence, Wilmette, Ill., Philip B. Maher, Chicago, Ill., Architect
Raymond A. Freeburg, Architect, Jamestown, N. Y.
San Bernardino Post Office, San Bernardino, Calif.
Manassas Post Office, Manassas, Va., Supervising Architect, Washington, D. C.
Allentown State Hospital, Allentown, Pa.
Home for Aged Women, Boston, Mass., Coolidge, Bulfinch & Abbott, Architects
Thrift Securities Building, Oak Park, Ill., White & Weber, Chicago, Ill., Architects
St. Peter and St. Paul Rectory, Chicago, Ill., Sandel & Strong, Architects
Community Building, Hershey, Pa.
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SUPER "IN-VIS-O" ROLLER SCREENS.

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A standard type of roller screen made of standard high grade materials and workmanship and guaranteed by "In-Vis-O." The result of nearly a quarter of a century of tested improvements. Not an experimental product.

Super "In-Vis-O"

A super refined roller screen of high quality, containing all of the best features of the Standard "In-Vis-O" together with ball bearing metal roller; new improved four-ply triple-rib metal Super "A" slide bar with central control and automatic catch and flat cable reinforced selvaged edge wire cloth.

Background

Nearly a quarter of a century of pioneering and improving the "In-Vis-O" roller screen has brought it up to a state of high perfection. "In-Vis-O's" many exclusive improvements and the company's financial standing and reputation together with thousands of satisfied customers are the architects' and owners' guarantee of satisfaction.

Co-operative Service

Direct with architects. Telephone local representative or write to Los Angeles, Calif. Complete details sent on request. An experienced department freely available for advice on all window screening problems.

Outstanding Features and Advantages of Super "In-Vis-O"

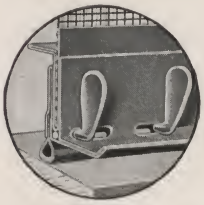


Fig. 1

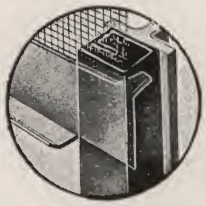


Fig. 2



Fig. 3

(1) Central control prevents screen from flying up and will stop screen at any desired place. A Super feature (Fig. 1).

(2) Rubber cushioned slide bar fits uneven window stools and prevents marring. A Super feature (Fig. 1).

(3) New improved four-ply triple-rib metal Super "A" slide bar especially designed for strength and comfortable handhold. A Super feature (Fig. 1).

(4) Super "A" automatic catch automatically locks screen securely when pulled down. A touch releases catch and brake and screen rolls freely to top of window. A Super feature (Fig. 1).

(5) No undersill sash operator necessary.

(6) Triple x (xxx) safety check on all slide bars prevents the screen and slide bar from coming out of grooves (Fig. 2).

(7) Metal grooves of $1\frac{3}{16}$ in. depth eliminate danger of wire cloth coming out of grooves (Fig. 2).

(8) Ball bearing metal roller insures smooth and easy operation. A Super feature (Fig. 3).

(9) All metal rollers spiral wound with wire cloth securely locked insures smoothly rolled wire cloth.

(10) Roller mechanism completely housed and concealed (Fig. 3).

(11) Steel mandrel runs full length of all metal rollers powered with a spring of exceptional durability (Fig. 3).

(12) All housings made with "In-Vis-O's" patented deflected lip, eliminating friction; thereby prolonging life of wire cloth and diminishing noise (Fig. 4).

(13) New improved patented deflected lip housing in two sizes; one extra small but roomy for steel sash transom bars, etc., up to 4 ft. 4 ins. high; and one regular size for higher openings (Fig. 5).

(14) All screens ready for instant installation.

(15) Adjustable telescoping metal grooves make screens easy to install or remove for repair (Fig. 5).

(16) New flush-type end cap adds neatness to patented deflected lip housings on transom bars and in exposed positions (Fig. 5).

(17) End caps securely but neatly locked on eliminate any danger of screens coming apart.

(18) Flat cable reinforced selvaged edges have strength of steel. Enough small wires of great tensile strength woven into reinforced selvages to equal a steel tape on each edge without piling. Made to "In-Vis-O's" exclusive specifications in genuine Monel, Mono Bronze, Standard Bronze and Silver finish. A Super feature (Fig. 6).

(19) Metal rollers, housings, slide bars and grooves available in long terne or solid bronze metals.

(20) The Standard "In-Vis-O" can also be had with one or more of the above Super "In-Vis-O" features.



Fig. 4

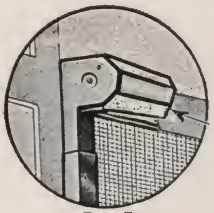


Fig. 5

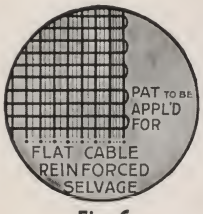
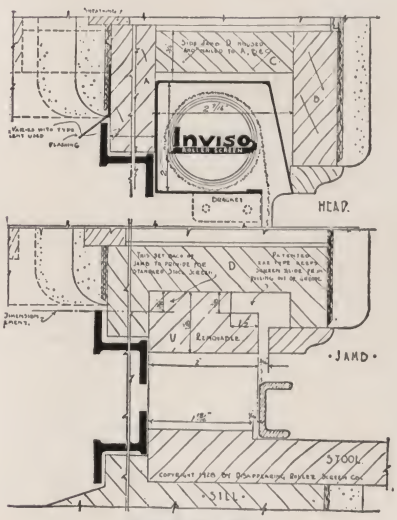
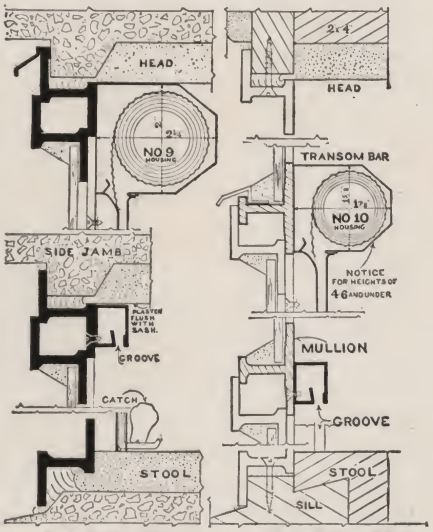


Fig. 6

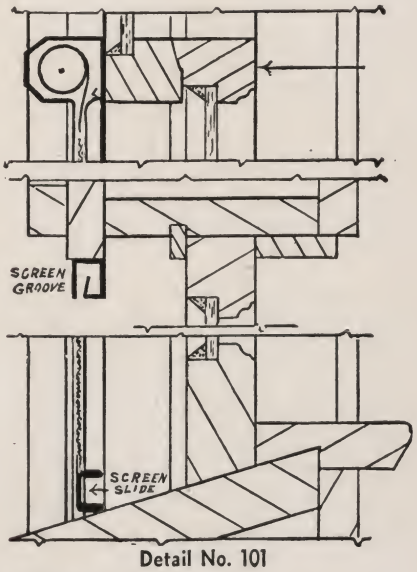
"Ask Your Architect, He Knows"



Detail No. 80



Detail No. 93 Detail No. 94



Detail No. 101

Write for New 1933 Catalogue of Full Size Working Details

THE HIGGIN MANUFACTURING CO.

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For Metal Access Panels and Lightproof Shades, see our pages in Manufacturers' Index

The Company

This company, since its inception in 1893, has been makers of the finest quality all-metal screens, made to order. Thousands of these screens installed more than thirty years ago are still serving satisfied owners. The firm financial standing and reputation for integrity of this company have meant much to the architect and his client.

HIGGIN ALL METAL SCREENS

Facilities

Our factories are centrally located, assuring prompt deliveries to all parts of the United States and Canada.

Field Organization

Our field organization consists of men of experience, many of whom have been with us for many years, whose knowledge of screening problems can be and is relied upon by architects throughout the country. An engineering, research and advisory service is maintained at the home office in Newport, where the more serious problems arising in an ever-advancing building field are given careful yet prompt attention.

Each of our sales representatives in the field maintains a competent, fully trained fitting organization, insuring installations of a most workmanlike character.

Types of Screens

Every possible style of window, every conceivable shape, every kind of opening, can be neatly and perfectly fitted with Higgin Screens.

Manufacturing all types of screens, rolling, metal frame of steel, bronze or aluminum, screen doors of wood or metal, porch screens—this company is unbiased in its recommendations.

Complete details of Higgin screen installations at half scale are available in printed form and will be sent for the asking.

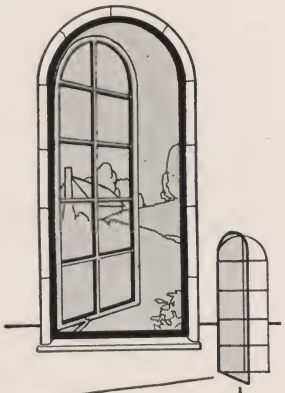


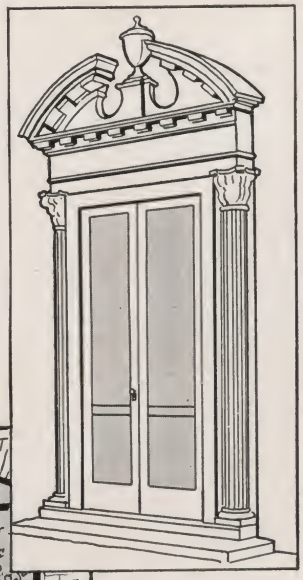
Above: Horizontal sliding screens may be used for many types of openings and are particularly adaptable to wide openings as they eliminate fixed mullions.



Above: Rolling screens solve the storage problem as they may be rolled up or lowered again in an instant. Adaptable to all widths from 9⅜ to 61 in.

Right: A side hinged screen with circle head. Higgin metal frame screens may be shaped to almost any design and may be formed into baskets.

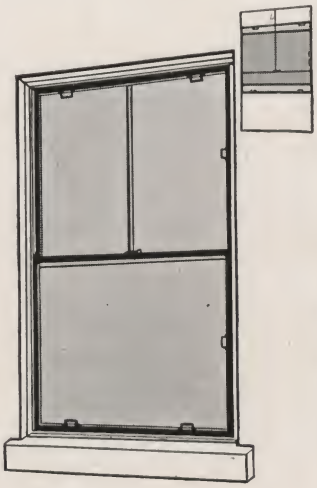




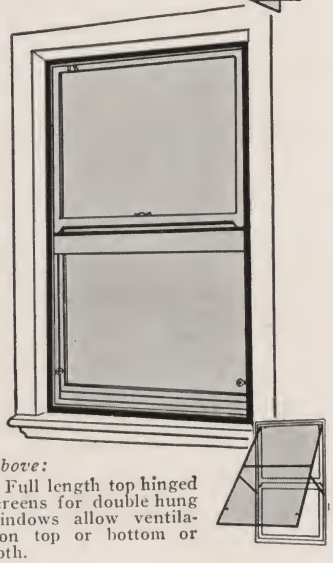
Above: In wood or metal Higgin screen doors are designed to retain architectural harmony with entrance details.

Below: We take pride in the many difficult porch screen installations we have executed.





Above: Outside double vertical sliding screens for double hung windows permit easy operation of awnings or access to flower boxes.



Above: Full length top hinged screens for double hung windows allow ventilation top or bottom or both.

Higgin Metal Frame Screens

The frame is of hollow or tubular construction with a groove formed on one side to receive the wire cloth. The netting is held permanently taut by a cam shaped non-resilient metal spline which locks in the groove of the frame. All edges coming in contact with the screen cloth are rounded, eliminating any danger of sharp edges cutting the wire strands. Screens are easily rewired, without removing screws or rivets or damaging the frame or spline.



Above:
A section through Higgin metal frame screen illustrating how wire cloth is held with metal spline in wiring groove.

Frames are assembled on heavy "ell" shaped reinforcements which extend into the frame or moulding at least 2 in. With this method of assembly steel frame screens may be enameled both inside and out and baked at high temperatures. Tubing is apt to "sweat" so that if there is no coating, rust may set in inside the tube and not be detected before the metal has been practically eaten away.

Two widths of moulding are manufactured, one $1\frac{1}{16}$-in. wide and the other $1\frac{1}{2}$-in. wide. Both are $\frac{7}{16}$-in. thick. They are made in steel, bronze or aluminum. The metal for steel or bronze may be .025-in. thickness or .032-in. thickness. Steel mouldings are spotwelded through the spline groove, bronze mouldings are soldered. Aluminum mouldings are drawn from seamless tubing .042-in. thickness and so formed as to make welding unnecessary.

Finish of Frames—Steel frame screens may be finished in black or gray enamel baked on, or in special lacquer colors, a priming coat first being baked on. The metal is of copper content steel, electro galvanized in the flat. Bronze frame screens may have oxidized statuary finish or may be left unfinished to weather. Aluminum screens may be enameled or lacquered or left unfinished to weather.

Wire Cloth—Standard cloth is of bronze 16 mesh .0113-in. diameter wire for steel and bronze frame screens and 16 mesh .011-in. diameter aluminum for aluminum screens. Finer meshes may be had in bronze.



Above:
Higgin reinforced corner construction for metal frame screens.

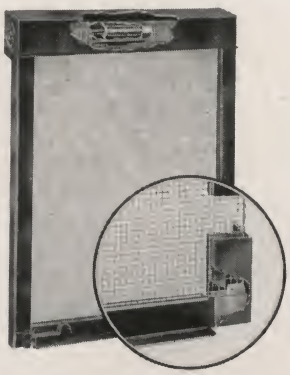
Rolling Screens

Higgin rolling screen equipment consists of a metal box in which are assembled the roller tube to which wire cloth is attached, spindle and self adjusting coil spring, 16 mesh genuine Anaconda Bronze wire cloth with double woven wire selvage edges. Metal side guides ($1\frac{3}{16}$-in. deep) and a one piece rewireable raising bar complete with felt cushioned bottom, friction shoes and automatic spring latches complete the equipment.

Assembly boxes have adjustable support brackets, removable end caps and a ready means of adjusting spring tension. Side guides are provided with flanges for fastening, and adjustable keepers to receive strikes of spring latches.

Screens are so constructed that the wire cloth or any part of the equipment can be removed or replaced without damage to any other portion.

Screen boxes are made in two sizes, $2\frac{3}{16}$ and $2\frac{9}{16}$-in. square at ends. $2\frac{3}{16}$-in. boxes may not be used for openings over 62 in. in height. Screens may be had in widths to cover openings from $9\frac{3}{8}$ to 61-in. wide. Boxes are made in one inch variations. Wide rolling screens are not recommended for high openings.

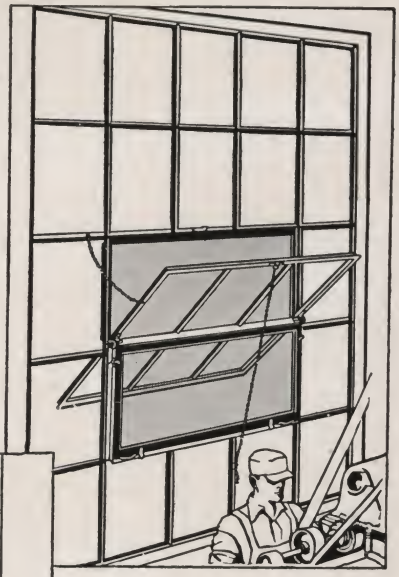


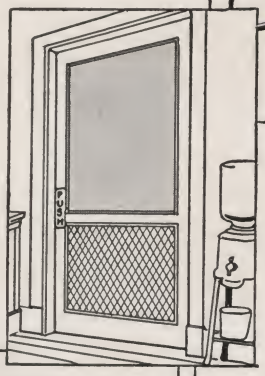
Higgin rolling screens are masterpieces in workmanship, design and operation.

Patents

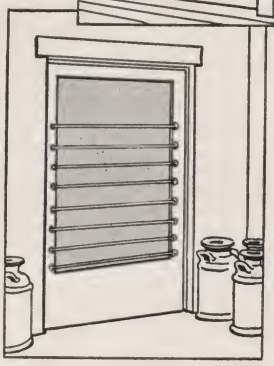
Higgin Products are covered by patents which protect important features.

Right:
Higgin screen equipment for horizontally pivoted steel sash consists of a flat screen covering the upper portion of the ventilator outside and a similar screen covering the lower portion of the ventilator inside. These screens seat in angle frames attached to the sash frame. Contacting with screens inside and out are special fixtures sealing all crevices against entrance of insects. This equipment may be applied to any horizontally pivoted sash of steel or wood.





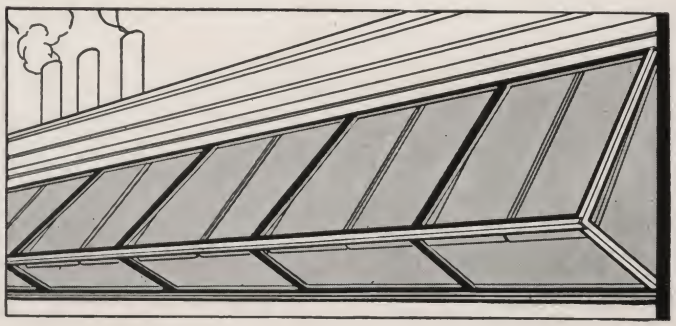
Left:
For office, factory or shipping entrances there is a Higgin door with the necessary features such as hardware and guards suitable for the particular service to which the door is to be subjected.



Right:
There are a number of Higgin equipments which may be used with Projected-Out or Projected-In type steel sash of all designs, whether commercial, architectural or other types. Screens are easily removed or placed. The equipment chosen will depend on how the windows are to be used.



Below:
In a majority of cases continuous monitor type sash require outside screens of basket shape. These may be built up of flat panels bolted together.



JAMESTOWN SCREEN & MFG. COMPANY, INC.

"Sentinel" Metal and Wood Frame Window, Porch and Door Screens
Roll Screens–Special Metal Products

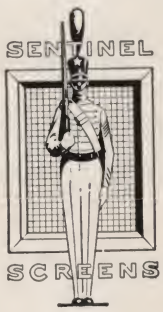
JAMESTOWN, N. Y.

REPRESENTATIVES IN ALL PRINCIPAL CITIES

Products

WINDOW and DOOR SCREENS.
PORCH SCREENS.
SPECIAL SHAPE SCREENS.
VISION SCREENS—All in Metal or Wood.
ROLL SCREENS of the Standard and Casement Types in Steel or Bronze.

These products are all manufactured by the JAMESTOWN SCREEN & MFG. COMPANY, INC. under protecting patents. The unusual completeness of the line enables an unbiased choice of the proper screen for each requirement.



Representatives are prepared to recommend the right screening method and to carry out the complete measuring and installation. There need be no division of responsibility.

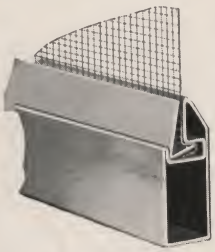


Fig. 1. Sentinel Frame Section

"Sentinel" Metal Frame Screens

The Sentinel frame (Figure 1) is distinctive in appearance and design, constructed in truss formation to give unusual strength and rigidity. The simple bevel of the exterior sheds dust and water and provides a moulded outline in keeping with architectural detail. Viewed from either side, it adds to the attractiveness of the window.

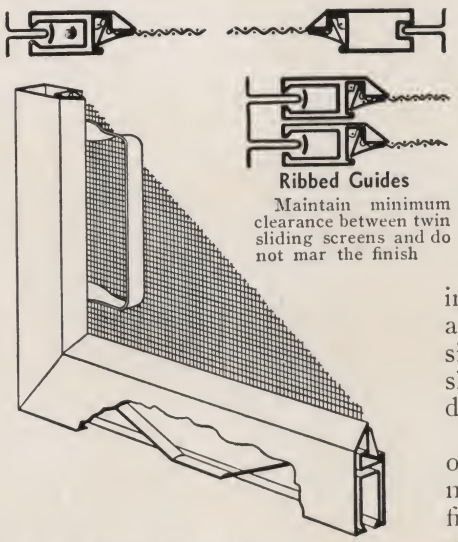
The wire cloth is held securely against a flat surface by the metal spline moulding, preventing the possibility of breakage at the point of leaving the frame. This moulding may be easily removed by raising it clear of the retaining shoulder with a screwdriver. It can then be replaced by tapping back into position.

Sliding screens (Figure 2) are retained by springs which are entirely concealed within the frame and therefore cannot be lost or knocked off. Ribbed guides offer a minimum of frictional surface and provide internal contact with the frame, so that the screen slides easily and smoothly without marring its finish in rubbing against channel guides.

Pivoted, Top Hung, Stationary, and all other types are furnished complete with bronze or brass hardware. A round-edge frame member is used on the pivot side and top and bottom bolts and astragals furnished where required.

Construction Details—Framing is of one-piece tubular construction $\frac{7}{16}$x1⅛ in., rolled from .025 or .032 material as specified. All corners are mitered and internally reinforced by concealed tight-fitting angle braces .050 in. thick extending two inches into adjacent members, and securely soldered.

Screen frames can be furnished in bronze, copper-bearing electro-galvanized steel, or other metals. Bronze may be had in natural or other finish and steel is a baked enamel finish of selected color. Sixteen mesh bronze wire cloth is standard but other kinds and meshes are available.



Ribbed Guides

Maintain minimum clearance between twin sliding screens and do not mar the finish

Fig. 2. Tension Springs Always Concealed Within Screen Frame

Special Screens

Conditions which require cages or special screening treatment are readily handled by an adaptation of regular construction. Plant and equipment are prepared to make any unusual parts required.

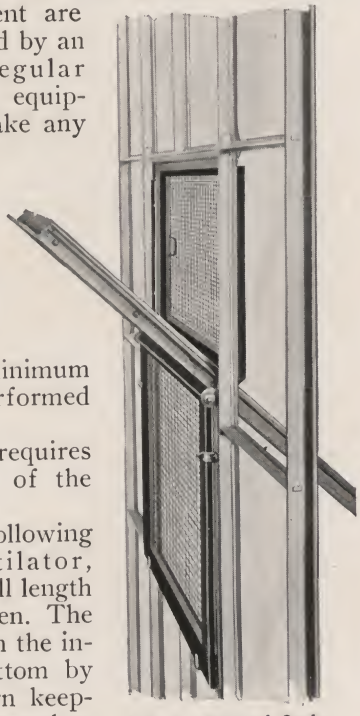


Fig. 3. Pivoted Sash Screen

Pivoted Sash Screens

The Jamestown method of screening industrial sash (Figure 3) is extremely simple and practical.

Installation entails a minimum amount of work, all performed from the inside.

The exterior screen requires no drilling and tapping of the sash.

It slides vertically, following the motion of the ventilator, and is held in place by full length clips attached to the screen. The lower screen, mounted on the inside, is held at the bottom by two hangers and by turn keepers at either side, all screwed to the ventilator frame. Metal fitting pieces notched to accommodate the sash muntins are provided in order to maintain close contact between the screens and the sash at all times. These are specially designed according to the make and type of sash.

Porch Screens

For extremely large window openings and for porches, $\frac{7}{16}$x1½ in. framing is used. This is tubular and rolled from .032 material. It is side wired by means of a channel shaped spline to match the metal doors.

When required, a ½x2 in. frame of similar construction will be furnished. Special hanging stiles and fitting pieces in either metal or wood are designed to suit the requirements.

Projector Frame Screens

This type of screen frame is designed for use in connection with steel casement and projected sash openings when clearance is required for latch hardware or other projections.

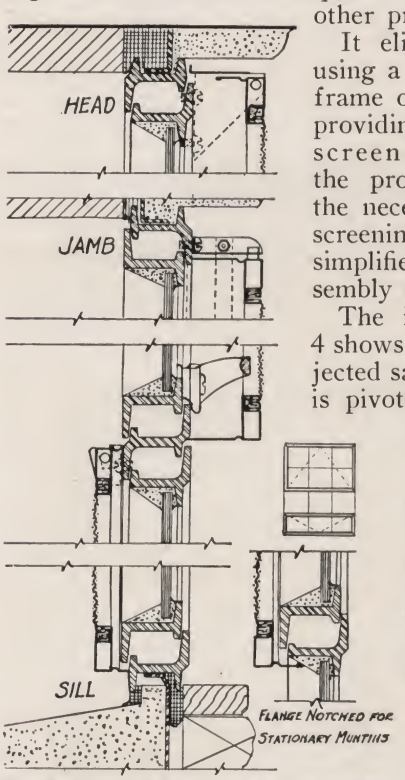


Fig. 4. Projector Screen on Projected Sash

It eliminates the need of using a separate pressed subframe or "projector box," by providing as a part of the screen frame a flange of the proper depth to afford the necessary clearance. The screening arrangement is thus simplified and the entire assembly made removable.

The illustration in Figure 4 shows the application to projected sash. The inside screen is pivoted at the top with a gravity catch in the bottom rail, the screen cloth easily clearing the sash latch handle. Only a narrow flange is necessary for the stationary outside screen. Any or all flanges may vary in depth to meet the condition.

The Projector Screen may be pivoted at the side to apply in a similar manner to casement windows. More detailed information for other specific uses will be furnished on request.

Metal Screen Doors

The five distinct types and weights of Metal Frame Screen Doors are made in bronze or steel according to the best methods of design and construction. The frames are tubular with heavy internal reinforcements and fully rewirable. The types are as follows:

Special Light—For balcony doors and large casements. 1⅛ in. thick with 1½-in. stiles, top, bottom, and cross rails; .032 in. stock.

Light (Figure 5)—For metal casement doors and occasional entrances; ½ in. thick with 2-in. stiles and cross rails, 3-in. top rail, 6-in. bottom rail; .032-in. stock.



Fig. 5. Metal Door Section ½ and ⅝ in.

Medium (Figure 5)—For average residential use; ⅝ in. thick with 2-in. stiles and cross rails, 3-in. top rail, 6-in. bottom rail; .032-in. stock.

Heavy (Figure 5)—For more severe residential use; ⅝ in. thick with 2-in. stiles and cross rails, 3-in. top rail, 6-in. bottom rail; .050 in. stock.

Extra Heavy (Figure 6)—For public buildings where subjected to constant usage; 1⅛ in. thick with 3¾-in. stiles, cross and top rails, 6-in. bottom rail; .050-in. stock.

In single panel doors 12-in. bottom rails are substituted for 6 in. Special solid bronze hardware is furnished for all doors. Closers are provided for the heavy and extra heavy types, but are recommended for all metal doors.



Fig. 6. Metal Door Section 1⅛ in.

Wood Frame Screens and Doors

A complete line of high quality Wood Frame Door and Window Screens are manufactured in the common soft or hardwoods. All have three coat enamel finish with bronze hardware and wire cloth.

Roll Screens

Jamestown Roll Screens are of the highest quality spring roller type and made in two designs. Details of construction are common to both and each is fully guaranteed.

The Standard Type (Figure 7)—An all-purpose screen which may be built into the window frame or applied to the surface of the frame or sash. Square roll box is of ample size to accommodate wire cloth for large openings.

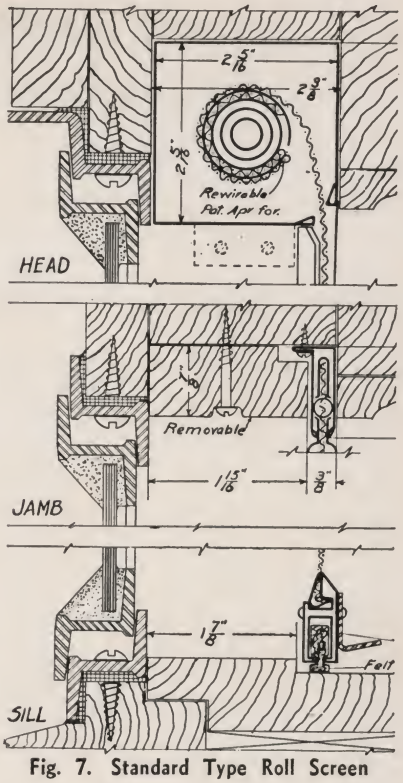


Fig. 7. Standard Type Roll Screen

Construction Features

The housing, guides, and lift rail may be of electro-galvanized steel construction in any baked enamel finish, or they may be in natural or finished bronze. Sixteen mesh bronze wire cloth is generally used and recommended. It extends into the guides ¾ in. at each side and has no projections to cut or injure itself.

Spring tension may be adjusted to raise the screen to any desired height.

The roller is mounted on bronze bushings running on a cold rolled steel axle shaft. The coil spring is of oil-tempered steel, and its tension is adjusted merely by applying a screwdriver to one exposed end of the shaft. The double tubular roll securely holds each strand of wire and is readily rewirable without the use of solder. It is not necessary to return the screen to the factory, since the roll box ends are removable.

The guides are rolled of heavy gauge material in single piece construction, easily fastened under or on the surface of the trim.

When secured to projector jamb strips the guides may be attached direct to steel sash, and provide ample clearance for hardware.

The moulded tubular lift rail is exceptionally stiff and strong and is rewired as for Sentinel frame screens. Positive, one-piece spring catches retain the rail in the lowered position tight against the felt contact strip. The rail projects into the guides 1 in. at each side, and runs on ball bearing contacts.

The Casement Type (Figure 8)—Is designed for direct attachment to steel casement sash. The roll box is of hexagonal shape and may be located at the head or on the transom bar. Guides are secured to projector pieces providing a ⅝ in. clearance between sash and cloth. This is sufficient to avoid possible projections of the sash without detracting from its appearance.

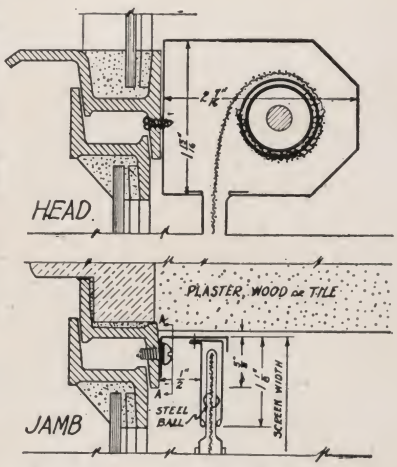


Fig. 8. Casement Type Roll Screen

JOHNSON METAL PRODUCTS COMPANY

Manufacturers of Wood and All-metal Window, Door and Porch Screens; Weatherstrip

1316 Holland Street
ERIE, PA.

NEW YORK OFFICE, 101 Park Avenue—Telephone, AShland 4-8320

JOHNSON INSECT SCREENS OF BRONZE, ALUMINUM, STEEL AND WOOD

Johnson Insect Screens

Are recognized as standard for windows, doors, porches by the leading architects of the country. Beauty of appearance, rigidity, ruggedness and unique ease of rewiring are the qualities upon which the Johnson reputation has been built, to which the attention of architects and screen users is directed.

Architectural Service

Architects are cordially invited to submit their screen problems to the experienced Johnson Engineering and Design Department which is maintained for the purpose of co-operation and solving most satisfactorily all kinds of screen installations.

Construction

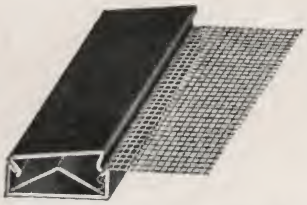
Johnson screens are made of bronze, steel, aluminum or wood. Johnson screens are adaptable to all types and sizes of openings. Patented internal bracing and corner reinforcements insure maximum rigidity and durability. Special Johnson Screen Hardware is designed to give the greatest possible convenience and permanence.

Materials

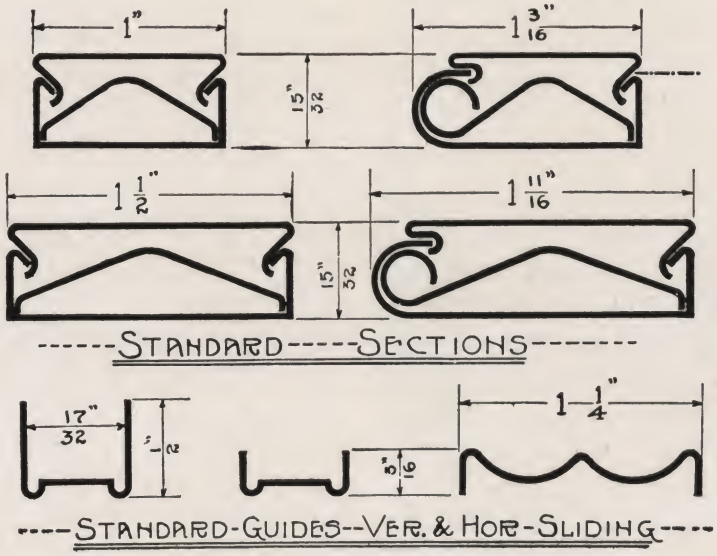
Johnson screens are made of the best quality of material obtainable. Bronze and steel frames are furnished in .023 to .032 gauge metal. Aluminum frames are made of .023 to .040 gauge material. Screen cloth can be furnished in all commercial weaves. 16-gauge bronze wire mesh is standard.

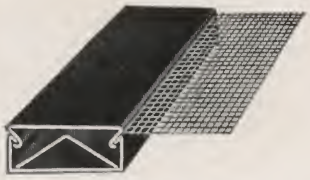
Finishes

The Johnson factory is equipped to furnish all commercial finishes to conform to all the requirements of installation. Special care used in packing insures delivery without damage.



Johnson Frames Are Outstanding in the Ease and Speed with Which They May Be Screened or Rewired





Upper and Lower Channels of the Johnson Tubular Patented Frame Interlocked
(Patent 1698885)

Recent Installations

Cornell Medical Center, New York Hospital, New York, N. Y.
Architects, Coolidge, Shepley, Bulfinch & Abbott, Boston, Mass.
Jeremiah Millbank Residence, Port Chester, N. Y.
Architects, Dodge & Morrison, New York, N. Y.
Maine General Hospital, Portland, Me.
Architects, Coolidge, Shepley, Bulfinch & Abbott, Boston, Mass.
Lakeside Hospital, Cleveland, Ohio
Architects, Coolidge, Shepley, Bulfinch & Abbott, Boston, Mass.
Langley Field Barracks, Langley Field, Va.
Supervising Architect, Washington, D. C.
Lewisburg Penitentiary, Lewisburg, Pa.
Architects, Alfred Hopkins & Associates, New York, N. Y.
Andrew Mellon Residence, Washington, D. C.
Duke University, Durham, N. C.
Hollenden Hotel, Cleveland, Ohio
Washington Hotel, Washington, D. C.
Elbert Hubbard II Residence, East Aurora, N. Y.
New York Central Depot, Buffalo, N. Y.
Ford Motor Company, Detroit, Mich.
Army War College, Washington, D. C.
Supervising Architect, Washington, D. C.
Shell Eastern Petroleum Co., Brooklyn, N. Y.
Father Coughlin's Shrine of the Little Flower, Detroit, Mich.
West Point Academy, West Point, N. Y.
Supervising Architect, Washington, D. C.

MORRISON-SKINNER COMPANY

Manufacturers of Wood and Metal Frame Insect Screens

WAKEFIELD, MASS.

AGENTS AND REPRESENTATIVES IN PRINCIPAL CITIES

Products

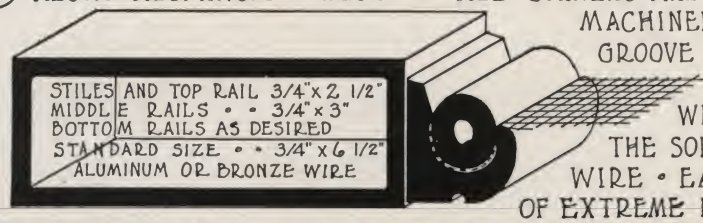
"Wakefield" Extruded, Tempered Aluminum Alloy Frame Window, Door and Porch Screens.

Also "Wakefield" Bronze, Steel and Wood Frame Window, Door and Porch Screens.

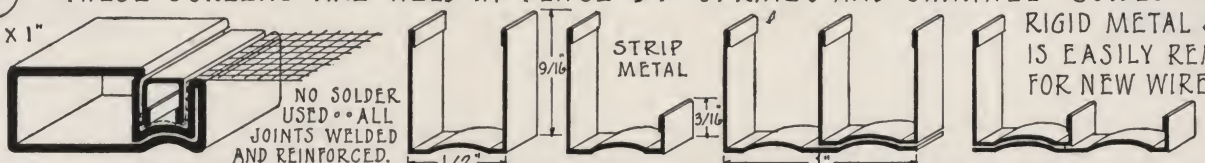
Screen Manufacturers for Over 40 Years

Forty years of continuous experience and a thoroughly modern plant assure production of the highest quality, and a promptness in manufacturing which is essential to congenial and profitable connections.

(1) THE **WAKEFIELD** SCREEN DOOR FRAME IS BASED ON A RECTANGULAR SEAMLESS TUBE OF ALCOA ALUMINUM ALLOY • • ALL CORNERS ARE ELECTRICALLY WELDED • RETEMPERED AND MACHINED OR GROUND SMOOTH AND CLEAN • • THE GROOVE IS KEYED AND FASTENED TO THE FRAME WITH HIDDEN MACHINE SCREWS • THE WIRE CLOTH IS ROLLED INTO THE GROOVE AND THE SOFT METAL SPLINE IS FORCED DOWN ON THE WIRE • EASY TO REMOVE AND REPAIR • • A DOOR OF EXTREME RIGIDITY • LIGHTNESS • AND DURABILITY •



(8) **WAKEFIELD** BRONZE TUBULAR FRAME FOR SMALL VERTICAL SLIDING SCREENS • THESE SCREENS ARE HELD IN PLACE BY SPRINGS AND CHANNEL GUIDES • • THE RIGID METAL SPLINE IS EASILY REMOVED FOR NEW WIRE CLOTH



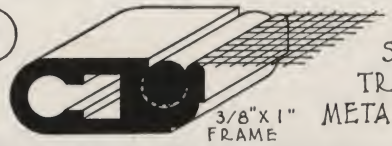
(3) THE **WAKEFIELD** EXTRUDED ALCOA ALUMINUM VERTICAL AND HORIZONTAL SLIDING SCREEN SECTION • THIS FRAME MEETS THE NEED FOR INCREASED FRAME SIZE FOR LARGE OPENINGS • VERTICAL SLIDING SCREENS ARE HELD IN BY CHROMIUM PLATED STEEL SPRINGS AND HORIZONTAL SCREENS OPERATE ON ROLLER BEARINGS



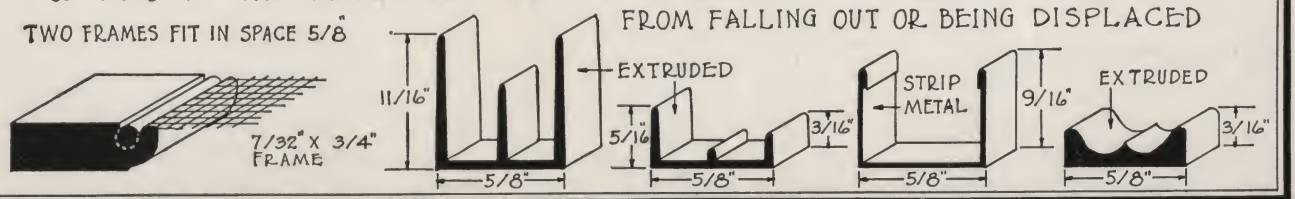
DOUBLE GUIDES FOR ALL CONDITIONS • SINGLE GUIDES FOR HALF SLIDING SCREENS

WAKEFIELD GUIDES ARE EXTRUDED OF THE SAME STRONG ALLOY AS USED IN SCREEN FRAMES • A STRONG AND RIGID GUIDE SO CONSTRUCTED THAT IT CAN BE SCREWED IN POSITION ASSURES ACCURATE AND PERMANENT ALIGNMENT • WE RECOGNIZE THAT THE GUIDE IS AS IMPORTANT AS THE FRAME FOR COMPLETE PROTECTION •

(4) ROUND EDGE **WAKEFIELD** ALUMINUM SHAPE FOR PIVOTED SCREENS AT CASEMENT SASH • IT IS EXTRUDED TO GIVE EXTREME STRENGTH • RIGIDITY AND DURABILITY • THE SOFT METAL SPLINE MAKES REPLACEMENT OF WIRE CLOTH VERY EASY •



(5) THE **WAKEFIELD** EXTRUDED ALCOA ALUMINUM FRAME SECTION OF GREAT STIFFNESS WITH LIGHT WEIGHT AND SMALL SIZE • IT CAN USUALLY BE INSTALLED IN ANY TYPE OF WINDOW • THE GUIDES AND SPRINGS ARE ARRANGED TO PREVENT THE SCREEN FROM FALLING OUT OR BEING DISPLACED



• • PLATE • A • •
• JULY 1931 • •

ACTUAL • SIZE • DETAILS • OF • SCREEN • FRAMES • AND • GUIDES
• • MORRISON • SKINNER • COMPANY • • • WAKEFIELD • MASS • •

WAKEFIELD
• • SCREENS • •

KANE MANUFACTURING COMPANY

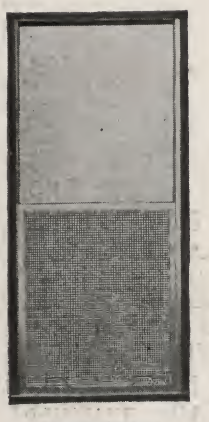
Manufacturers of "Kane Quality" Rustless Insect Screens

MAIN OFFICE AND FACTORY

KANE, PA.

SALES OFFICES AND DISTRIBUTORS IN ALL PRINCIPAL CITIES

SINCE "KaneQuality" 1890



Single Sliding

Products

"KANE QUALITY" INSECT SCREENS—Bronze, Steel, Aluminum and Wood Frames, Roll Screens. Custom-made only for any type or shape of window, door or porch opening.

Venetian Blinds and Metal Weatherstrips.

Experience

For more than forty years, the KANE MANUFACTURING COMPANY has been engaged in the manufacture of custom-made insect screens. This background of experience reflects an expert personnel, specialized methods and equipment, an expert distributional organization and merit achieved in marketing quality products at a fair price.

Service and Facilities

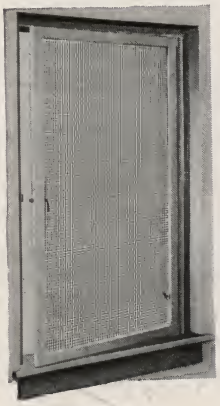
KANE MANUFACTURING COMPANY distributors are located in all principal cities. Efficient organizations are maintained—thoroughly qualified to make practical suggestions when screen problems arise, prepare details, estimate costs and properly install our products. Through them, our clients are assured of their specifications being satisfactorily handled in all respects. Architects and builders are cordially invited to consult our distributors without obligation.

General

"Kane Quality" Screen Products, being the outgrowth of many years of experience in manufacturing custom-made screen equipment to meet all sorts of structural and climatic conditions, naturally embody the use of the most durable materials and the most practical principles in design, construction, fastening and operating devices, many of which are exclusive. Features common to all "Kane Quality" Screens are: each unit made to fit exactly and to function properly as intended; sturdiness without clumsiness; readily re-wirable by removable moldings; solid brass or bronze fastening and operating fixtures; easy accessibility and removability; modern finishing materials—paints, lacquers, enamels in any desired color—scientifically applied for permanence and beauty; each screened opening numbered in duplicate, one number upon the screen and the other affixed to its opening.

Screen Cloth—The heart of the screen is made from bronze, monel-metal or aluminum. Sixteen mesh fabrics will effectually exclude small insects. Any kind of commercial fabrics or any mesh furnished when specified.

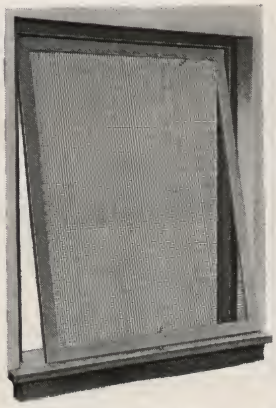
Bronze screen cloth is recognized as being generally unexcelled for appearance and durability under normal atmospheric and climatic conditions.



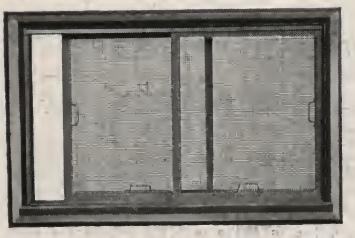
Pivoted Single Casement



Combination Casement



Top Pivoted



Double Horizontal Sliding



Pivoted Double Casement

PROVISION FOR SCREENS

Insect screens perform as important a function in modern American homes, offices, institutional and public buildings as do heating, plumbing and lighting equipment.

Frequently no consideration is given to screens until they are needed. When the insect season arrives, an imperative demand arises for screens to be provided immediately—and coincidentally, it is discovered that no provision has been made in the construction of many structures to accommodate them in a practical manner—such as rabbets of proper dimensions, stops, bearing surfaces, grounds, etc.

Such discrepancies complicate installation methods, cause annoying delays in devising ways and means for application of screens and measurably increase material and labor costs. Provision for a practical and economical screen installation should be considered when designing and detailing the openings of any structure of which screens may probably be a future part of the equipment.

They should be contracted for as soon as all details for their manufacture are available—the same as for any other building equipment—no matter at what season of the year.

TYPES OF SCREENS

Windows

When the construction of window casings will permit, outside top-hung, side-hinged or pivoted, double vertical or horizontal sliding or roll screens—covering entire window openings, are the most practical types for double hung or casement windows, as free access may be had to interior sash fixtures, shades or draperies and for cleaning windows.

Single sliding screens covering the lower sash of double-hung windows are economical equipment as they may be used to screen either the lower or the upper sash openings.

Flanged screens are designed especially for wood or metal casement openings where sash hardware or sash parts interfere with the application of the conventional screen types.

The new and exclusive exterior Lift-fold type can be applied to most standard wood or metal double hung windows.

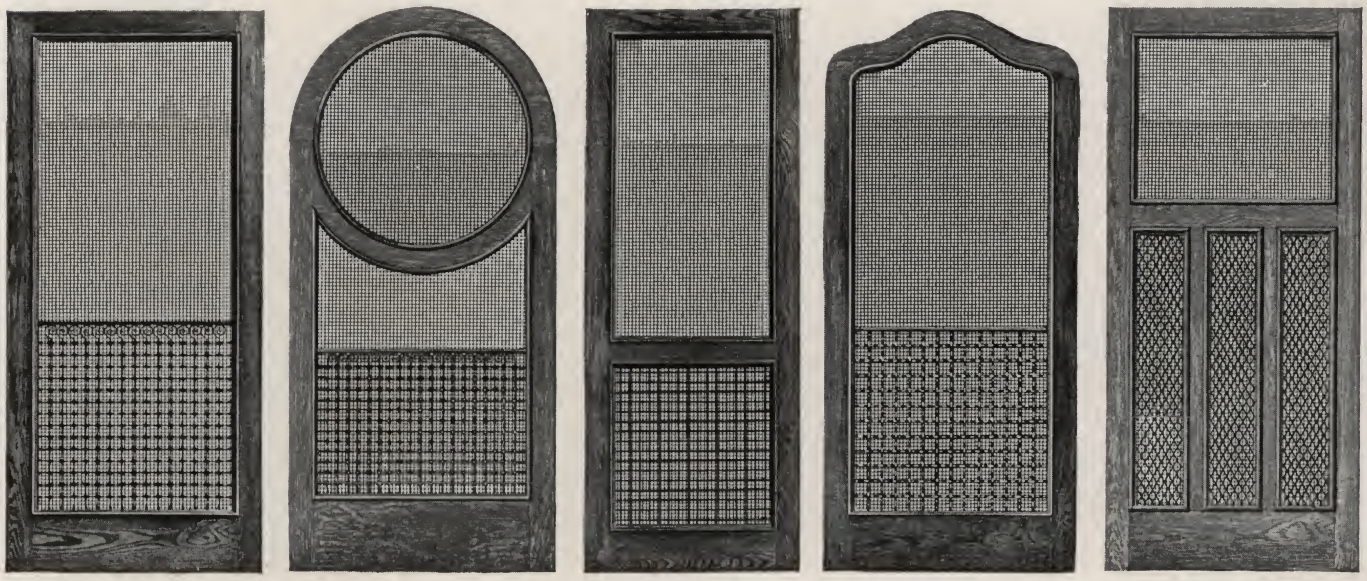
Center-pivoted sash ventilators are most practically and economically screened by the application of two screens to each ventilator.

Roll screens are applicable to all types of double hung or casement windows.

Door and Porch Screens

These should be carefully considered in regard to construction, design, fastening and operating fixtures, to provide the service and convenience required of them and to befit the architecture of the building upon which they are to be erected.

All screen requisites of whatever kind are to be found in "Kane Quality" Screen products.

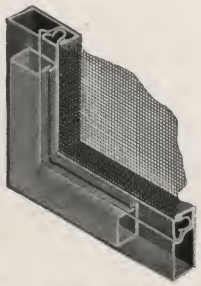


Screen Door Designs

METAL FRAME INSECT SCREENS

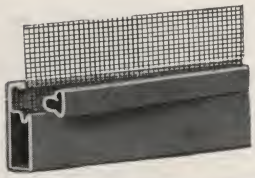
Bronze—Steel—Aluminum

"Kane Quality" Metal Frame Screens are one-piece tubular sections made from Anaconda Bronze, cold-rolled alloy steel—galvanized inside and outside, or, aluminum alloyed for hardness and tensile strength. Rigidity with light weight is obtained by welding, brazing or soldering the lapped seam of these tubular sections. The corner joints of frames are mitered and internally reinforced with inserted members, or, steel and aluminum corners may be electrically butt-welded, forming a one-piece continuous frame with the maximum resistance to torsion. The molding forms a flush joint with the frame, holds the screen cloth evenly and securely and is easily removed when necessary. Fastening and operating fixtures are solid brass or bronze in a variety of types, each suited to its particular purpose.



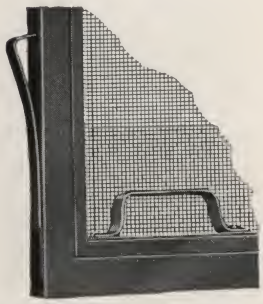
Sturdy Internal Corner Insert

Reinforces and strengthens the corners, assuring rigidity and resistance to torsional stresses



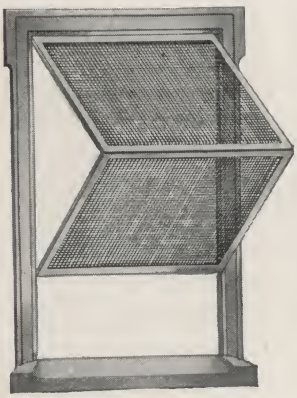
Molding Holds Screen Cloth Evenly and Securely

Gives neat appearance. Screens are rewirable by removing the molding



Corner Section of Sliding Screen with Riveted Pull

Heavy duty spring holds screen in any desired position and prevents slipping or falling



Lift-Fold

Flat Frame Screens

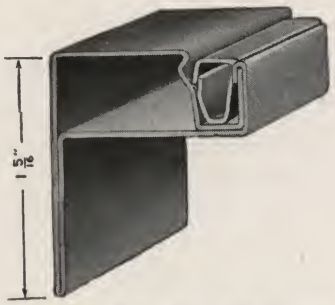
Standard frame sections for usual size windows are $\frac{7}{16}$ in. thick by 1 in. wide. For unusually large windows and for porches, $\frac{7}{16}$ in. thick by $1\frac{1}{2}$ in. or $1\frac{7}{8}$ in. wide frames are recommended.

Flanged Screens

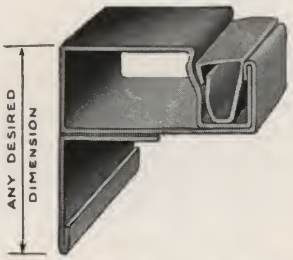
These are regular $\frac{7}{16}$x1 in. flat frame sections with the addition of projecting flanges of sufficient depth to clear sash hardware or other sash fixtures on wood or metal casement windows. Furnished in one-piece frame sections with $1\frac{5}{16}$ in. or $1\frac{3}{16}$ in. flanges, or, in two-piece built-up sections when greater clearance is required. These screens are neat in appearance, insect tight and materially lower in cost than regular flat screens installed with separate mountings.

Lift-Fold Screens

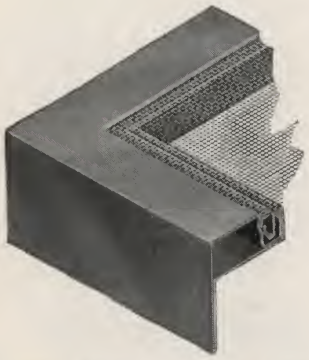
These have regular $\frac{7}{16}$x1 in., $1\frac{1}{2}$ in. or $1\frac{7}{8}$ in. wide frames, according to size of openings. These screens possess outstanding operative features. Completely assembled at our factory, there are no parts to become broken, damaged or lost; are easily installed from the interior with little effort within the jambs of most wood or metal double hung windows; are securely retained in any position, permitting the use of both hands for washing windows from the interior or exterior or for operating shutters or awnings; can not be pushed out of windows accidentally nor voluntarily except by raising them to the full open position and by deliberately releasing six separate safety catches. They are a meritorious alternate for vertical or horizontal double sliding screens and are particularly adapted for hotels, hospitals and institutions.



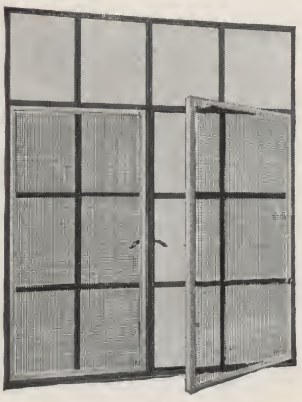
Section of One-piece, Metal Frame Flanged Screen



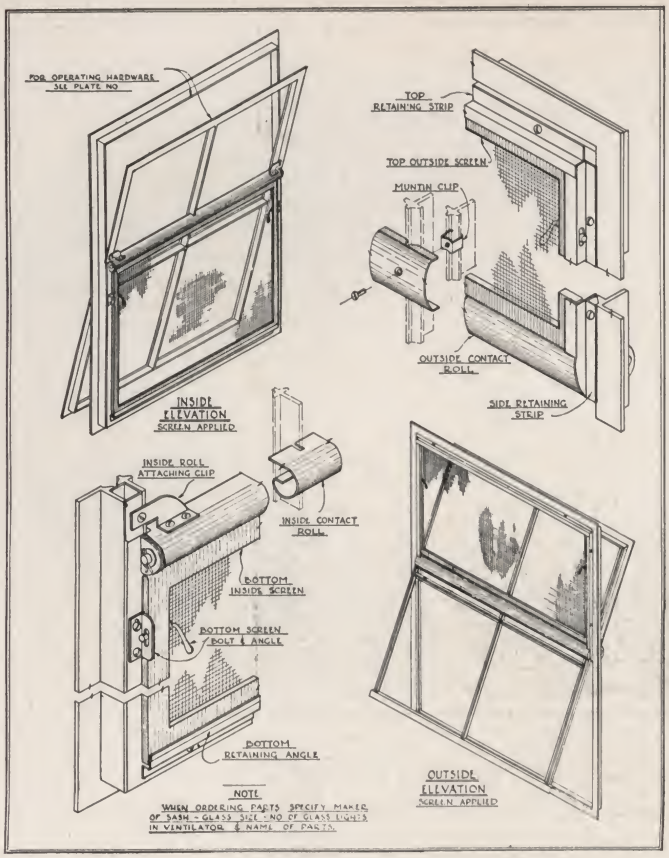
Section of Built-up Two-piece, Metal Frame Flanged Screen



Corner Section of Flanged Screen with Screen Fabric in Place



Residence Casement



ROLL SCREENS

"Kane Quality" Roll Screens are as representative of character as other "K. Q." products. They may be easily installed in any type of window in old or new buildings—preferably upon the interior. It is not necessary to build window openings to accommodate the screens. The roller-housing and guides may be entirely concealed in the window trim of new buildings when provision is made for them. Standard guides are designed for attaching direct to window jambs. Special flanged guides are provided for attaching to metal windows. When attached to plaster jambs, shims are provided for uneven surfaces if required.

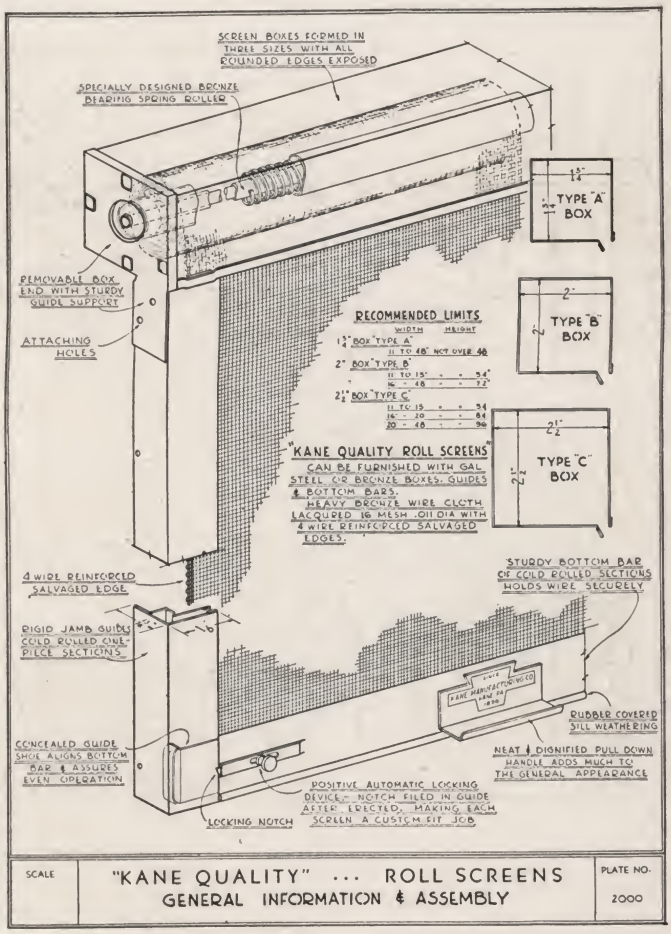
Construction

Furnished in fractional inch dimensions from 11 in. to 48 in. wide and up to 96 in. high. Three sizes of roll-housings with rounded edges are available—1¾, 2 and 2½ in. square—according to heights of openings. Ends of housings are removable to permit replacement of screen cloth if necessary. The steel tube roller is supported at each end by brass bearings rotating upon a cold-rolled steel shaft. The roller encases a heavy duty oil tempered steel spring operating in a special lubricant. Standard guides are $\frac{13}{16}$ in. wide by 1⅛ in. deep, permitting substantial margins of the screen cloth to be retained in the guides. The screen cloth of 16 mesh bronze with specially woven selvage edges is securely soldered to the roller. No strain occurs upon the soldered joint when the screen is fully extended as several plies of screen cloth remain unwound upon the roller. The operating bar is neatly designed and provided with attractive catches and pulls. Solid brass sliding shoes at ends of bar prevent screens from rising rapidly when catches are released and prevent tilting or jamming of the operating bar. Felt inserted in the lower edge of the operating bar provides an insect-tight and light-tight contact with uneven window sills and protects polished sills.

Mountings for roll screens are furnished in galvanized cold-rolled steel—finished in pyroxylin or baked enamels of any color, or, in solid bronze mountings in the usual commercial finishes.

SCREENS FOR CENTER PIVOTED SASH

All makes of center-pivoted sash may be effectively and readily screened with "Kane Quality" regular flat-frame screens. Two screen members are applied to each sash ventilator—one above the sash axis on the outside and one below on the inside. Auxiliary contact and mounting fixtures are attached to sash to receive screens. The fixtures are of the simplest possible design, attached with a minimum of effort and remain permanently attached to the sash. They permit full swing of ventilators and easy removal or replacement of screens. This type of "Kane Quality" equipment is the most economical to install and the most satisfactory in all respects of any upon the market.

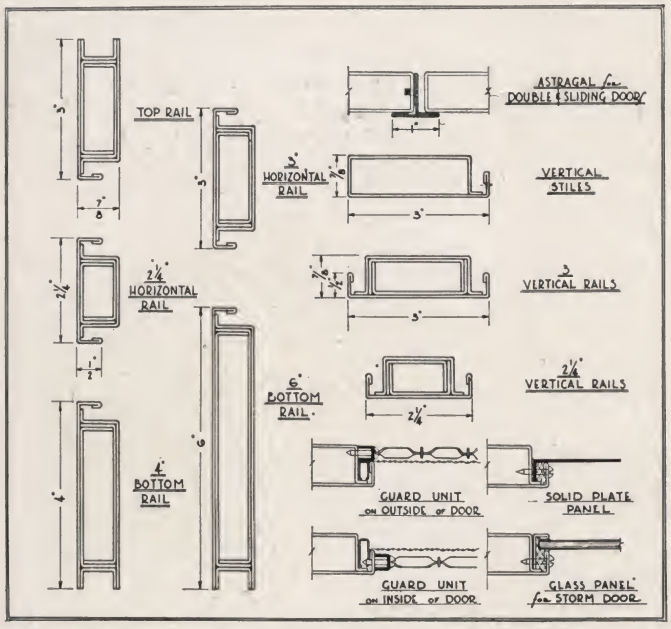


C19J

METAL FRAME DOOR SCREENS

Bronze—Steel—Aluminum

"Kane Quality" Metal Frame Door Screens are made from commercial bronze, cold-rolled alloy steel or, alloyed aluminum. Frames are tubular sections of neat design with removable moldings for fastening the screen cloth. Furnished in three different frame sizes and weights for all kinds of door entrances. Top, base and cross rails are reinforced throughout their entire length and additional reinforcing members are inserted within the frames to receive hardware. The doors are completely equipped with substantial bronze hardware of neat pattern, consisting of mortise locks of dead-bolt or cylinder type, plain or ball-bearing butts, flush-bolts, door closers, push-rods, etc., as may be specified.



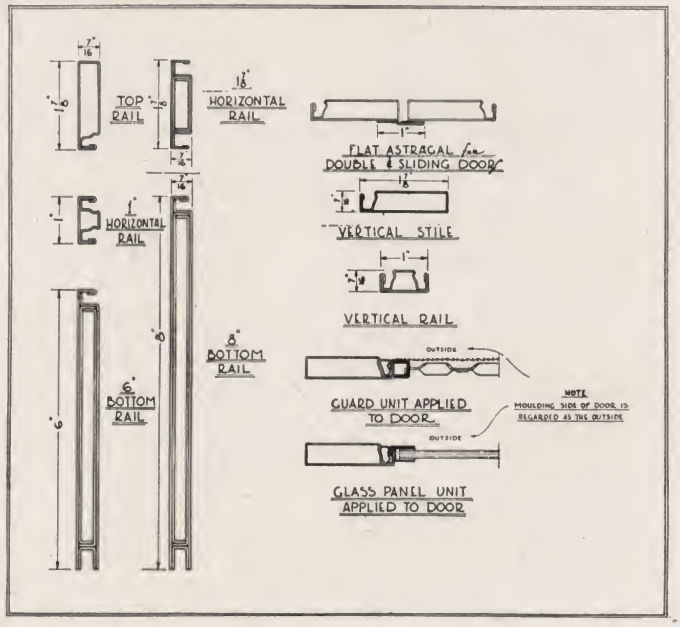
Heavy Type

Heavy Weight Doors furnished in bronze, steel or aluminum. Frames .050 in. gage, ⅞ in. thick by 3 in. stiles, top and cross rails. Recommended for severe residential or institutional service.

Standard base rails for the three types are 6 in. high for two or more panel doors and 12 in. high for single panel doors. Other base rail heights furnished when desired.

Steel frames finished in any desired color with pyroxylin or baked enamels. Bronze and aluminum frames in any of the usual commercial finishes.

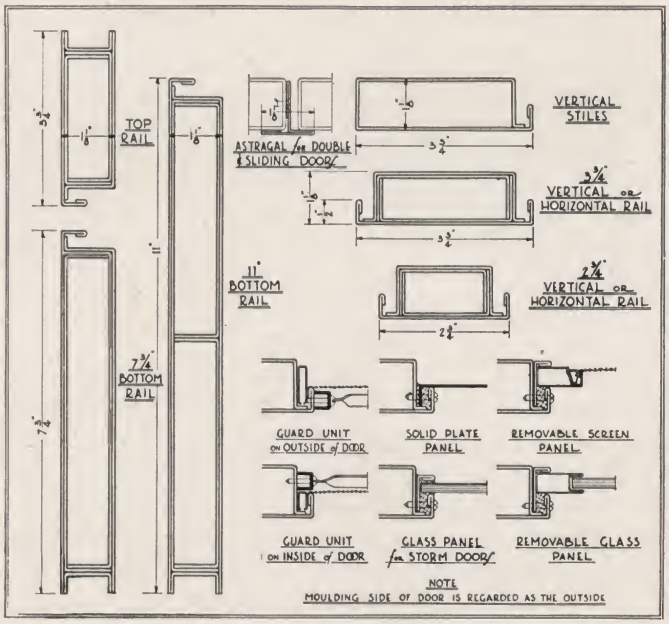
Extra heavy 16 mesh bronze screen cloth is recommended for these doors.



Light Type

Light Weight Doors furnished only in bronze or steel frames, .035 in. gage, $\frac{7}{16}$ in. thick by 1⅞ in. wide stiles, top and cross rails.

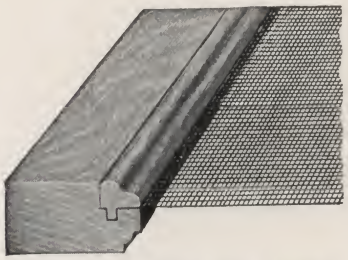
Recommended for small door or French window openings.



Extra Heavy Type

Extra Heavy Weight Doors furnished in bronze, steel or aluminum. Frames .050 in. gage, 1⅛ in. thick by 3¾ in. stiles, top and cross rails. Recommended for extreme service upon public buildings, etc.

WOOD FRAME SCREENS

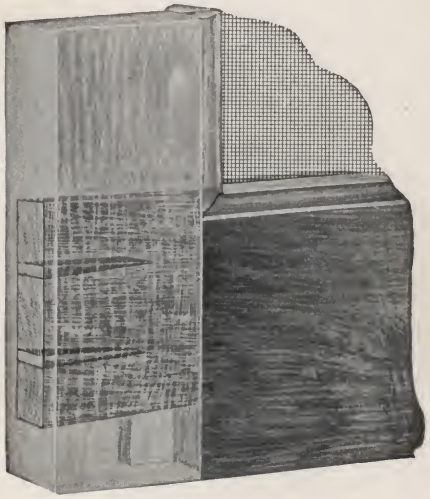


Method of Wiring Wood Frame Window Screens

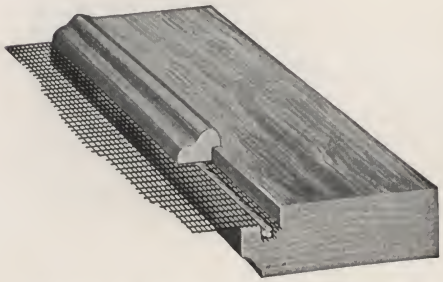
"Kane Quality" Wood Frame Screens are unexcelled in serviceability and appearance. They are obtainable in any kind of wood for exterior or interior use—all thoroughly seasoned and kiln-dried, in any design, frame size or finish. White pine frames are recommended for exterior screens.

Construction

All corner joints are full mortised and tenoned, wedged and waterproof glued. Frames are rabbetted and grooved to receive the screen cloth which is tautly and securely held in place with neat moldings fastened with brass nails. "Kane Quality" Screens will not sag or warp.



Wood Door Corner Joint



Method of Wiring Wood Door Screens

Window Screens

Standard frames are either $\frac{13}{16}$ in. or $1\frac{1}{8}$ in. thick after being dressed and sanded. Stiles and rails are of proper width to conform to the size of screens. Brass clamp rivets are inserted in the corners of $\frac{13}{16}$ in. thick screens for exterior use.

Door Screens

Standard frames are $1\frac{1}{8}$ in. thick with $3\frac{1}{2}$-in. stiles, top and cross rails. Single panel doors have 11-in. base rails; two or more panel doors have $5\frac{3}{4}$-in. base rails.

Porch Screens

Standard frames are $1\frac{1}{8}$ in. thick with $2\frac{1}{2}$-in. stiles, top and cross rails and $5\frac{1}{2}$-in. base rails.

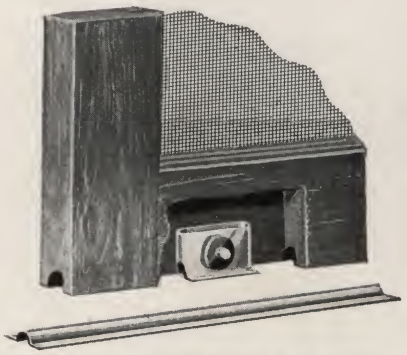
Finish

Painted frames receive three coats of pure linseed oil, white lead and zinc. Stained or natural finish frames receive one coat of filler and two coats of spar varnish.

Any color and any kind of finish is furnished as may be desired.



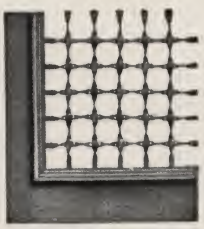
Section of Sliding Screen with Riveted Corner, Pull, and Flanged Friction Spring



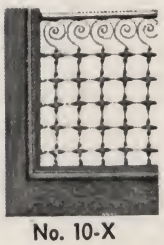
Horizontal Sliding Screen with Sheave and Brass Guide

DOOR SCREEN GRILLES

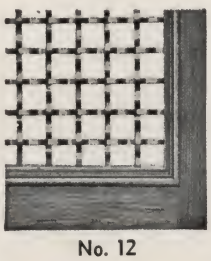
A variety of ornamentally designed brass and bronze grilles are obtainable for protecting the lower panels of wood or metal frame door screens and which add materially to their appearance. Grilles are generally attached under the moldings of wood frame doors. For metal frame doors, the grilles are mounted in channel frames and attached to the inner edges of panels with machine screws.



No. 10



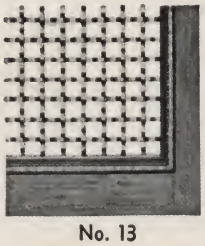
No. 10-X



No. 12



No. 12-Y



No. 13



No. 14

Note: The face with the removable molding which holds the screen cloth, is the outside face of all kinds of screens regardless of how they are placed.

ORANGE SCREEN COMPANY

Wood and Metal Frame Insect Screens

MAPLEWOOD, N. J.

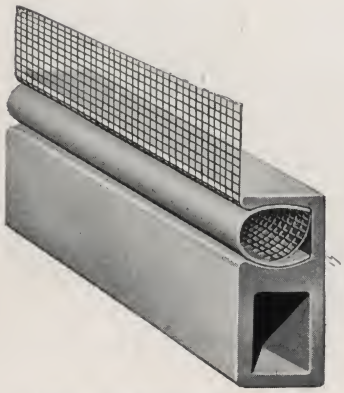


Fig. 1. Wire Locking Detail

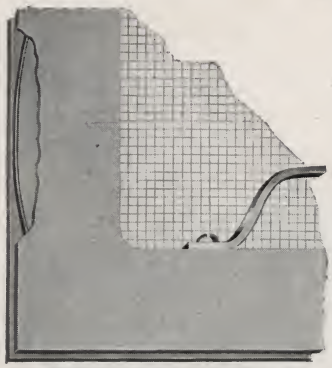


Fig. 2. Cut-away Showing Compression Spring

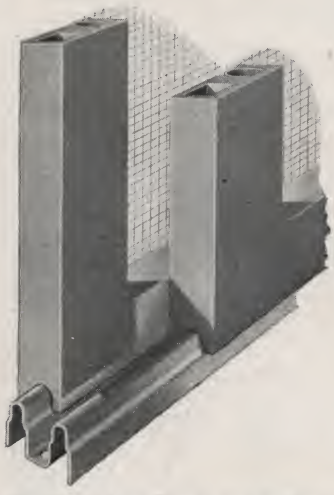


Fig. 3. Metal Track for Double Sliding Screens

Orange
EXTRUDED
ALUMINUM SCREENS

Description

All the advantages of aluminum, the metal of modern mode, are obtainable in Orange Extruded Aluminum Frame Screens as made by the ORANGE SCREEN COMPANY, one of the progressive leaders for over twenty-three years in the manufacture and installation of wood and metal screens and complete screen equipment for all types of windows and door openings.

Our business is divided between the usual custom made work and the making of certain standardized forms for adaptation to various makes of steel sash and frames. Our specialty is Aluminum.

Orange Extruded Aluminum Screens combine beauty, light weight, easy vision, strength and permanence. They are easy to handle and will not corrode or cause stains on buildings. They are the most unobtrusive screens, and their effect in place, when at all noticeable, is one of elegance. The color of the metal is in vogue for modern architectural effects.

Orange Aluminum Screens have no unsightly ridges or corner braces. The metal is as strong as steel or bronze, with about one-third the weight, and the cost is no more than other metal screens of less substantial construction. They excel in every screen requirement and leave nothing to be desired for perfection.

Details of Construction

These screens are made of extruded bars of aluminum, a special alloy developed for our use by the Aluminum Company of America. It is one of the strongest non-ferrous metals made. The screens have successfully met the most severe tests and have been accepted for installation in projects demanding perfect manufacture and unusual performance. The aluminum positively will not rust, corrode or oxidize.

Frame Members—The frames are fabricated from special extruded aluminum sections as illustrated herewith. Each section is formed by extrusion and not rolled from sheet metal.

Corners—All corners are mitered, firmly *welded* to shape and finished perfectly smooth, to form a solid seamless frame of remarkable resistance and rigidity. Welded corners are more effective and far stronger than riveting or reinforcing at the corners.

Wiring—16-mesh dark aluminum wire screen cloth is generally supplied as standard. However any mesh or gauge may be had if specified. The aluminum wire positively prevents staining of adjacent trim as it will not rust or oxidize. The screens are easily rewired by the removal of the aluminum locking strip from the screen channel.

Finishes—They can be lacquered in a limitless range of colors to harmonize with any color scheme or they may be had in the natural platinum-like finish which gives a handsome effect and harmonizes well with any adjoining material.

Hardware—All Orange Extruded Aluminum Screens are fitted and furnished with solid aluminum hardware of such design as to insure faultless operation and installation.

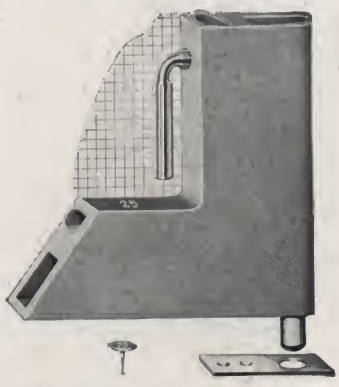


Fig. 4. Movable Pivot Detail

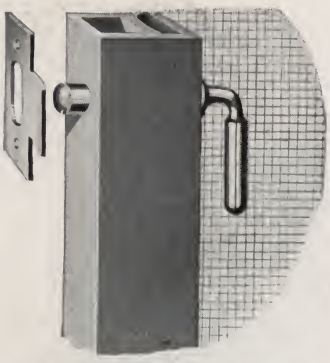


Fig. 5. Spring Bolt Detail

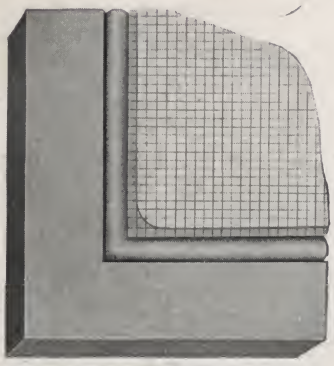


Fig. 6. Welded Corner Detail

Estimating Service

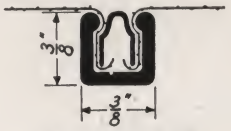
We invite an inquiry from owners, architects and builders.

We will gladly have our nearest representative give an estimate of cost either from your plans or from the actual building.

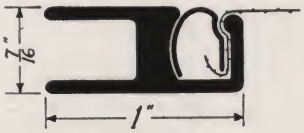


"Details and Data for Screen Installations"

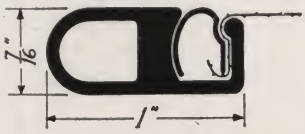
There are twenty-one plates contained in our A.I.A. catalogue "Details and Data for Screen Installations." The plates and text matter cover most of the screening problems encountered in residential and commercial work. They are for the use of architects and are furnished on application without charge or obligation.



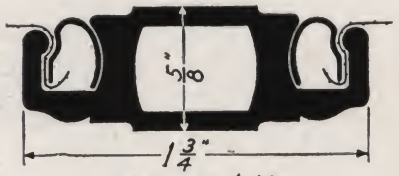
SECTION A-19



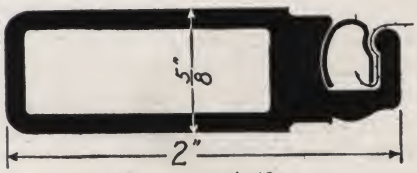
SECTION A-1



SECTION A-4



SECTION A-14

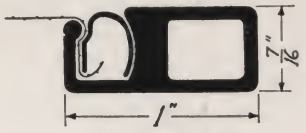


SECTION A-13

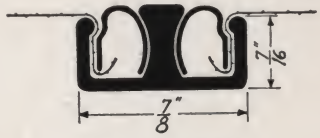
LOCATION OF STANDARD SECTIONS IN SCREEN FRAMES

Types of screens	Stiles	Top rail	Bottom rail
Stationary, full height	A-1	A-1	A-1
Top hung, full weight	A-1	A-4	A-1
Vertical sliding, single	A-1	A-5	A-1
Twin vertical slide, top screen	A-1	A-1	A-5
Twin vertical slide, bottom screen	A-1	A-5	A-1
*Horizontal slide, twin or multiple	A-1, A-5	A-1	A-1
†Horizontal slide, twin or multiple	A-1, A-5	A-5	A-4
Single casement, pivoted	A-5, A-4	A-5	A-5
Pairs casement, pivoted	A-4, A-5, A-9	A-5	A-5
Horizontal pivoted sash	A-1	A-1	A-1

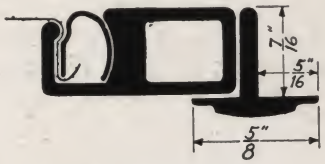
*Frame construction when using rib track.
†Frame construction when using channel track.
Note: Sections A-10 and A-11 used for very large screens or where extra width is desired.
Rules for braces: Screen 60 in. high must have at least one horizontal brace, Section A-6 or A-19. Screens 50 in. wide must have at least one vertical brace, Section A-6 or A-19.



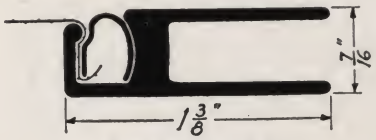
SECTION A-5



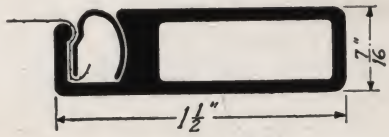
SECTION A-6



SECTION A-9



SECTION A-10



SECTION A-11

Specifications

As Used by Treasury Department, U. S. Government

Note: This specification is submitted as typical for good custom work. Variations of sash sections, etc., may be made as desired. This specification covers the basic patents for extruded aluminum screen sections as made by ORANGE SCREEN COMPANY, and this specification will insure the use of Orange Aluminum Screens.

1. Scope of Work—All exterior openings having double hung sash, casement sash and entrance doors shall have aluminum insect screens.

2. Arrangement—All double hung windows and in-opening casement windows shall be screened with outside full length screens with cross rails opposite the meeting rail of the sash over 42 in. in height.

3. Wire Cloth—Screens shall be covered with aluminum wire screen cloth not less than *.015 in. diameter woven 16 meshes per lineal inch. Finish to match the frames.
(*Extra heavy gauge. Standard gauge .0125 may be substituted.)

4. Metal Frames—Frames shall be of the rewireable type, constructed of specially extruded and drawn solid one-piece aluminum sections, manufactured from aluminum alloy having the following chemical composition: magnesium 0.45% to 0.8%; silicon 1.2% to 1.6%; aluminum (minimum) 96.5%. All members to be properly heat treated and have the following physical properties: tensile strength (minimum) 30,000 lbs. per sq. in.; yield point (minimum) 18,000 lbs. per sq. in.; elongation (minimum) 20% in 2 in.

5. Frame Members—Frames for windows shall not be less than 7/16x1 in. with center wall 1/4 in. thick and outer wall 1/16 in. (.0625) thick. Frames for window screens over 72 in. in height and exceeding 24 sq. ft. shall be 7/16x1 1/2 in., outer walls of which shall be 1/16 in. and center wall 5/32 in. Door openings shall be screened with heavy aluminum screen doors, stiles and top rails shall be not less than 5/8x2 in., rewireable cross braces 5/8x 1 3/4 in., bottom rails 5/8x6 in., with 1/16 in. kick plate both sides. The outer walls of the screen door members shall be 3/32 in. thick and center walls 1/4 in. thick.

6. Workmanship—All corners shall be welded. Surfaces shall be finished perfectly smooth. All frames shall be natural aluminum, fine wire brush, satin finish. Wire cloth shall be held in place with rolled aluminum moulding keyed into channel of the frame.

7. Hardware—Shall be of solid aluminum to match the frames and of such special design as to insure convenient operation and installation of window screens and screen doors. All outside full length top hung screens shall be provided with two arm adjusters located in such position so that windows can be held open for window cleaning.

8. Installation—All screens shall be accurately fitted and secured in such a manner that they may be readily removed and replaced without damage to the existing work. They shall be installed complete with all necessary hardware, guides, stops, etc., and attachments to frames or other connecting work of openings. Extra stops or filler strips shall be provided if necessary to make insect-tight connections at all edges, and such stops or strips shall be finished to match similar adjoining work. Screens and hardware shall be carefully adjusted and left in perfect working order.

9. Each screened opening shall have a number stamped on the metal or on an aluminum plate secured thereto and each section of screen shall have a number corresponding to its openings.



Section A-15

A New Small Frame Section

Two New Sections 7/16x5/8 in. for Steel Sash and General Use

Round recesses are for filler pads, hardware attachment, etc.



Section A-16

Our new 7/16x5/8 in. section, while specially adapted to steel sash work, is also useful for general screen work where frames are of small to moderate size.

This section is extraordinarily strong, compact and light, yet it is so rigid that it can stand abuse far beyond that to which any screen is normally subjected.

Nearly every standard make of metal window (including casements, double hung, projected, center pivoted, etc.) is designed so that screens may be installed.

Our 5/8 section is particularly adaptable to this work.

Our engineers, co-operating with the manufacturers of these various windows, have evolved economical and mechanically correct methods for screening practically every type of opening.



Where screens are included in the contract for steel sash we suggest to architects that they insist on this type of screen frame.

The principal features of a casement steel sash installation (opening out) include the screen which is removably attached to the steel frame, a handle fixed to the sash frame which holds or releases the sash, and a sash operator which is secured to the bottom of the sash frame which opens and closes the sash without interfering with the screen in any way.

The simplicity, effectiveness and convenience of such an installation are ideal.

The accompanying illustration shows a typical example. The screen frame can be identified by the handle on the bottom rail.

THE ROBBINS MANUFACTURING COMPANY

ESTABLISHED 1880

Manufacturers of Wood and Tubular Metal Frame Screens

1801 No. Central Park Ave., CHICAGO, ILL.

BRANCH OFFICES IN ALL PRINCIPAL CITIES

Robbins Screens

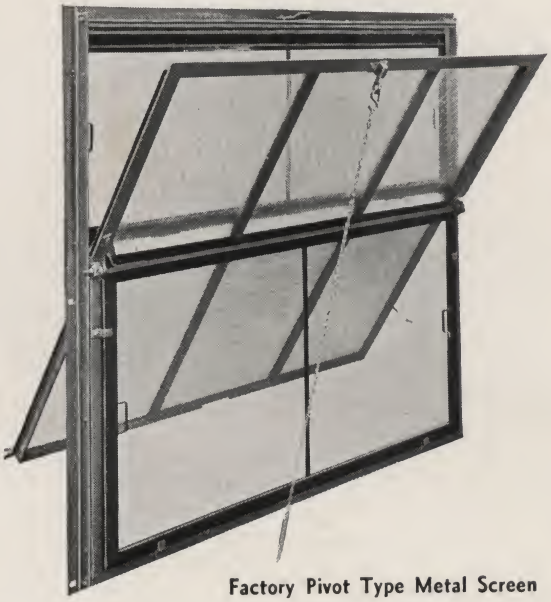
Robbins All Tubular Metal Screens with frames of commercial bronze or electro galvanized steel; Robbins Wood Frame Screens for windows and doors; Robbins Wood and Metal Porch Screens.

Services and Installation

Since its establishment in 1880 the Robbins Manufacturing Company has specialized in the exclusive manufacture of high quality, expertly finished, made-to-order screens. Ample manufacturing facilities insure prompt delivery.

Types of Screens

Robbins screens are furnished in every known type for every kind of window and door.



Factory Pivot Type Metal Screen

Robbins Tubular Metal Frame Screens—Made of commercial bronze or electro galvanized steel. *The Robbins Tubular Metal Frame Screen* is a one-piece tubular section made from commercial bronze or electro-galvanized steel .031 in. thick or .025 in. thick as desired. Stiles and Rails are 1 in. wide by $\frac{7}{16}$ in. thick. *Finishes*—Bronze screen, natural, statuary or polished finish. Steel screen, finished two coats of enamel baked on. Color desired.

Robbins Tubular Metal Frame Screen corners are reinforced with a corrugated metal corner 2x2$\frac{3}{16}$ in. to insure rigidness. The copper bronze screening is secured with a spline that rests flush with the frame. The spline will not twist or curl up when removed. Robbins screen hardware is made of solid brass.

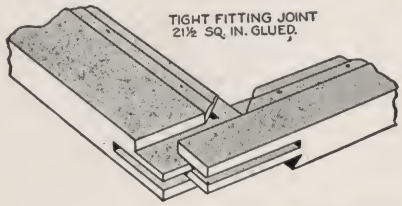
Special Note: For extra large openings, Robbins tubular metal screen frames are 1½ in. wide and $\frac{7}{16}$ in. thick.

General Specification Data

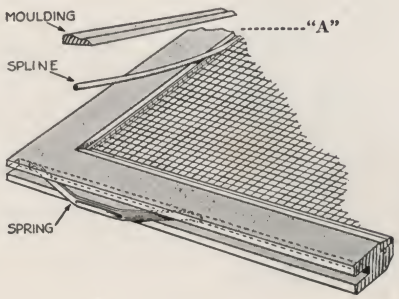
Robbins Wood Screens—Frames made of white pine, unless otherwise specified.

Frames $\frac{13}{16}$ in. thick have stiles from 1⅝ to 2¼ in. wide and base rails from 2¼ to 3½ in. wide. When frames are 1⅛ in. thick, stiles are 2¼ in. wide and base rails from 2¾ to 4 in. in width. Robbins screen frames are thoroughly sandpapered and are then finished in specified colors, with three coats of pure lead and oil. Corners are joined with a double mortise joint and the copper bronze wire is secured in place with the improved Robbins lock-strip method of fastening each strand firmly in place without the use of tacks to rust or pull out.

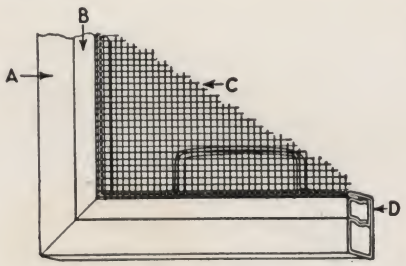
All screens are numbered and duplicate numbers are furnished for each opening.



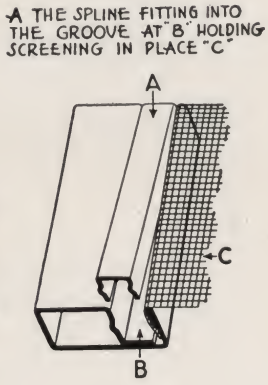
Left:
Method of Joining Corners of Robbins Wood Screens



Right:
Method of Inserting and Holding Screening Taut
No tacks used; instead, netting is rolled into groove at "A" and spline wedged in



A—Galvanized Steel or Copper Frame
B—Spline, Fitted into Groove, Holding Screening Taut
C—Accurate Mesh Deadtone Screening
D—Tubular Frame Welded at this point—Rigid and Indestructible



Robbins Porch Screens—Made of white pine unless otherwise specified. They are joined, wired and painted as specified above for Robbins wood frame screens. Robbins porch screens have frames 1⅛ in. thick with the stiles and top rails 2¼ to 3½ in. wide and with base rails 2¾ to 5½ in. wide.

Robbins Door Screens—These are 1⅛ in. thick and made of white pine unless otherwise specified. Stiles, top rails and cross rails are 2¼ to 4 in. wide; base rails 2½ to 8 in. wide.

Robbins screen door frames are joined with a full mortise and tenon joint. The netting is secured in place as in the case of wood window screens. Robbins screen doors are equipped in the lower panels with the Robbins No. 1 Diamond guard wire, flat or twisted grilles.

ROLSCREENS

the

STANDARD OF COMPARISON

in

Modern Window Screens



ROLSCREEN COMPANY

PELLA ***IOWA***

CABLE ADDRESS "ROLSCREEN"

NEW YORK
PITTSBURGH
DETROIT
SYRACUSE
DES MOINES

PHILADELPHIA
BALTIMORE
CLEVELAND
ROCHESTER
MILWAUKEE
SAN FRANCISCO

BOSTON
WASHINGTON
CINCINNATI
GRAND RAPIDS
OKLAHOMA CITY
LOS ANGELES

CHICAGO
HARTFORD
ATLANTA
INDIANAPOLIS
KANSAS CITY

Dealers Everywhere—Distributors in All Principal Foreign Countries

Rolscreens
TRADE MARK

ROLSCREEN COMPANY, PELLA, IOWA

The activities of the Rolscreen Company are concentrated on the work of assisting architects and builders in screening windows efficiently and conveniently without in any way detracting from exterior or interior window beauty. Too often has the appearance of beautiful windows been ruined by careless screening. To fulfill this policy it offers "Rolscreens," a product of proven excellence, engineered to meet the most exacting requirements for all types of windows, casements, double hung, institutional—whether wood or steel. Hundreds of special detailing suggestions are available. Rolscreens are sold with a ten-year guarantee and with a pledge of sincerity that each Rolscreen user must be satisfied.

COLONIAL WINDOWS » » » « « « SCREENS BY ROLSCREEN

Rolscreens are as necessary with Colonial windows as they are with casements. How engaging is the beauty of the clear, sparkling glass and the clearly defined muntins! These would be completely blotted out by old-fashioned outside screens.



Rolscreened Home of Leslie I. Nichols, Architect, Larchmont, N.Y.

The Old Way



ROLSCREENS WERE NECESSARY

The fine Early American home shown above was designed and built by Leslie I. Nichols, Architect, for his own use, and was completely Rolscreen equipped. Mr. Nichols makes an interesting comment. He says:

"The old type wooden screens set on the outside of the window entirely conceals the window, hiding the beauty of the paneled divisions. Wooden screens set on the outside couldn't be used for this house. Therefore, the screens must be set inside. Could a wooden screen be used satisfactorily inside? It is a known fact that it can't. The answer was a rolling type screen. The beauty of the windows, both inside and out, has been preserved in the only way possible consistent with the most improved method of screening. This house is just as charming and lovely as its prototype."

THE THREE STANDARDS OF ROLSCREEN COMPARISON

ONE—Compare Rolscreen Convenience and Maintenance Cost

1—No annual dragging out of dirty screens and matching them to windows.

2—No annual taking down and storing.

3—No annual expense of painting and repairing.

4—No storage space required.

5—Never taken down too soon or put up too late.

6—Screens do not have to be taken down when windows are washed.

7—Window washing is reduced 50% because rain does not beat dirt onto window panes as with outside screens.



8—Awnings can be used.

9—Offer easy access to flower boxes.

10—Make easy the housewife's task in cleaning, in shaking out rugs and dust cloths.

11—Installed on the inside of the window they stay clean and last long.

12—Easy to reach and easy to operate.

13—Do not soil drapes as do outside frame screens when drapes blow against them.

14—Easily removed in case of unforeseen accident.

15—No special window or screen hardware required.

16—Delicate drapes are not torn in operating or removing screens.

17—Do not interfere with the easy operation of the window. Special operators which exert wracking and distorting pressure on the lower part of the window are not needed.

TWO—Compare Rolscreen Effect Upon Window Appearance

1—Do not blot out inside or outside window beauty.

2—No heavy frames to obstruct the view and mar the appearance.

3—Do not blur or distort the vision through fine glass for when the window is closed the screen is raised.

4—A closed window with the Rolscreen raised admits 20% more light than the same window with a stationary screen that is always over the glass.

5—Beautiful window sills are not encumbered with screen tracks or grooves.

6—Do not mar the beautiful slender lines of the finest windows.

7—Do not detract from charming draping effects or interfere with any draping scheme.

8—The small exposed parts are decorated to harmonize with the adjoining window trim.

9—Do not conceal exterior effect of inviting drapings.

THREE—Compare Rolscreen Exclusive Mechanical Features

1—Rolscreen wire cloth is locked in at the sides as well as at the top and bottom. This feature prevents sagging and bagging and insures insect tight screens, even in widths as wide as 61 inches.

2—Enlarged ends of locking bar (friction blocks) fit snugly in guides at sides insuring even and easy flowing operation, and eliminating rack.

3—The floating roller moves forward as the screen is lowered eliminating dragging and wearing of the screen wire on the screen housing. The cloth always drops straight off the roller into the guides.

4—Slotted holes in flanges of the guides permit the screens to adjust themselves to expansion or contraction of woodwork and the screens never bind or stick.

5—The guides frictionally engage the ends of the Rolscreen cross-bar and control the action of the screen so it does not fly to the top. The screen is always within easy reach.

6—Rolscreens are practically indestructible. A blow that would tear the cloth in an ordinary frame screen merely disengages the Rolscreen cloth from the guides and is automatically re-entered by raising and again lowering the screen.

7—Rolscreen catch operates automatically. It is simple and positive.

8—Plaster Channels make possible the installation of Rolscreens directly in plaster jambs without the use of wood trim or screws to hold them in place, yet easily removable.

9—Friction Angles—A simple mounting for Rolscreens in existing windows. Require no fitting or cutting.

10—Rolscreen "AluminA" wire cloth is especially processed to make it rigid. Racking and sleaziness is eliminated—a very important feature in rolling screen construction.

11—Rolscreens are guaranteed to give ten years of satisfactory service.

Rolscreen Guarantee

Rolscreens are guaranteed against defects in workmanship or material for a ten-year period. A new screen will be furnished free of charge for any failing under this guarantee. This does not cover damage or abuse to the screen or any other condition beyond the control of the manufacturer.

ROLSCREEN CONSTRUCTION

The first considerations in the designing of Rolscreens have always been that they must be of rigid and durable construction, they must be simple to install and easy to operate. Mammoth presses, intricate rolling machines, and the most modern tool equipment have contributed their part to this, and at the same time they assure accuracy and precision in the manufacturing processes.

Rolscreen's Features Are Patented

Those features which have made Rolscreens practical and have led to their adoption and use by thousands of Owners, Builders and Architects each year, are exclusive and patented.

General Information

Rolscreens are built in standard sizes, to fit all openings from 11 to 61 in. wide and up to 120 in. high, and are carried in stock ready for immediate shipment. The metal parts are constructed of lead coated terne-plate, which offers a perfect bond for paint. The illustration shows the Rolscreen structure and method of installation. The same general idea is followed in both old and new construction.

Where openings are over 61 in. wide, mullions must be used. These can be of simple wood construction or metal mullions can be furnished as shown.

Rolscreen Features

The Rolscreen guides (1) grip lugs (2) fastened in the selvage of the screen wire and prevent its sagging and bagging. Slotted holes in the attaching flanges allow the guides to adjust themselves in case of swelling or shrinking of the woodwork. Blocks on the ends of the cross bar (8) are frictionally engaged in the guides. This frictional engagement prevents the cross bar tilting and regulates the action of the screen, preventing its flying to the top when released. When installing Rolscreens, the cross bar, as it is drawn through the guides, acts as a template and automatically adjusts the guides to the opening. Lips at the upper ends of the guides, co-acting with the housing, assure accurate installation. The guides are very inconspicuous—the only part exposed being a bead the size of a pencil. A specially designed groove along the jaws of the guides prevents paint entering and binding the screens when redecorating them.

Rolscreens Are Indestructible

Rolscreens are built to stand up under hard service. If the screen wire receives a blow hard enough to tear or bag the ordinary screen, the lugs (2) in the selvages of the cloth are released from the guides (1) without injuring the wire. Upon pushing the entire released edge to the outside and raising the screen, it will re-align itself by riding over the cut-away back side of the guide (3) and will be automatically re-entered and re-stretched when the screen is lowered.



The Housing

The Rolscreen housing is electrically welded and of very sturdy construction. Recessed ends (6) reinforce it and make it rigid. The standard housing is 2⅝ in. square. For openings less than 52 in. high, a 2⅛ in. housing may be used. For openings over 84 in. high, a 2⅞ in. housing must be used.

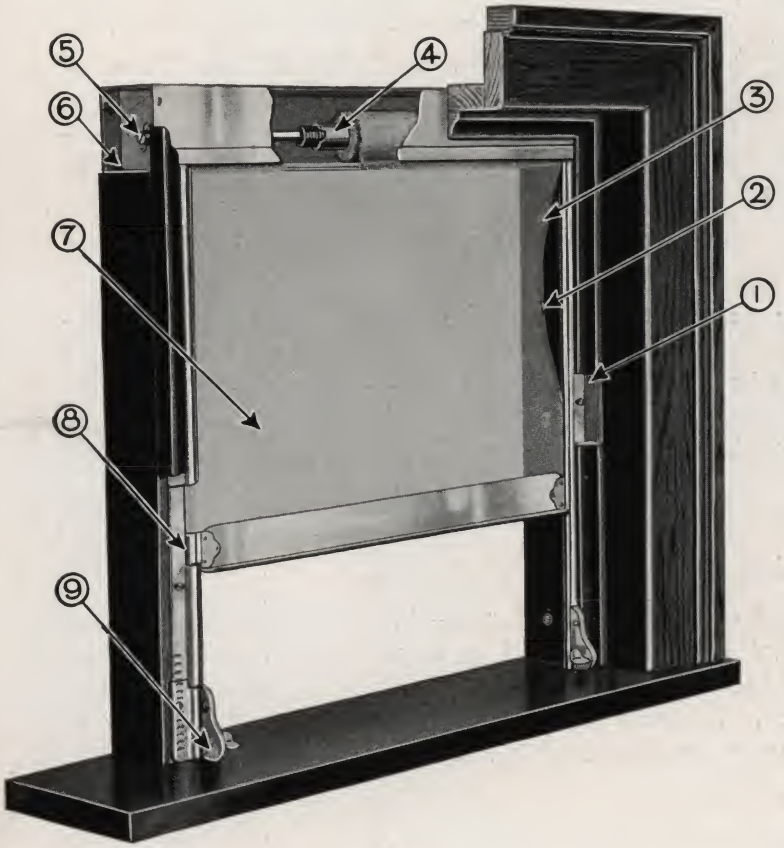
The Roller Assembly

The roller (4), onto which the screen wire is soldered, together with the spring inside, is built in the Rolscreen factory. The springs are coiled out of extra heavy oil-tempered wire on automatic machines. The entire assembly is very simple and durable and cannot give trouble.

The Floating Roller

A special feature of Rolscreens is the patented "floating" roller (5). As the screen lowers and the roll of screen cloth grows smaller, the entire roller assembly automatically moves forward. The screen wire cannot drag on the lower edge of the housing and cannot wear out.





Screen Cloth

The screen cloth (7) is double-lifed, rust-proofed, triple-selvaged AluminA, especially woven and processed for Rolscreens. It is a clean gray color and almost invisible. It has great tensile strength, it is rigid and is built up of materials that are guaranteed not to break or crack under continuous flexing. The mesh is perfect, sixteen strands to the inch. This is an ideal weave. It keeps out the smallest insects, yet allows maximum visibility and ventilation.

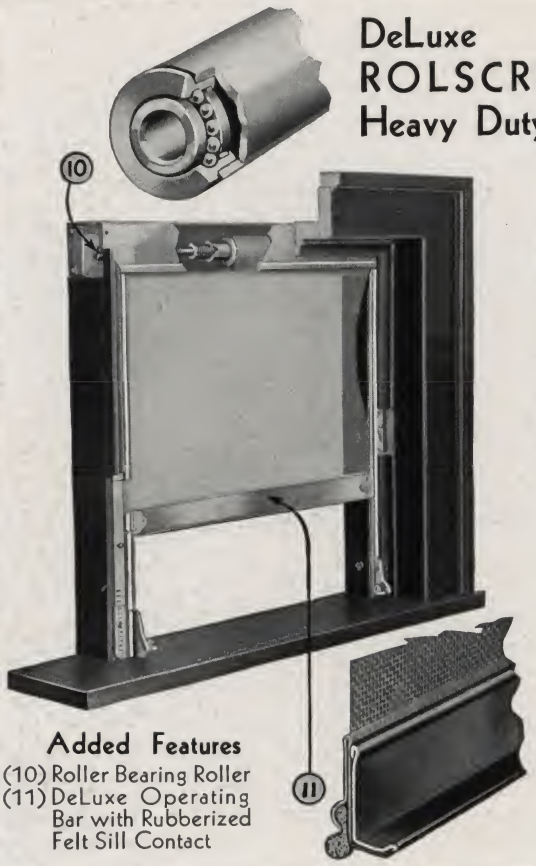
Latches

When lowered, Rolscreens are automatically locked on the window sill by positive latches (9) which are perfectly adjustable and can be unlocked only from the inside. No attachments to mar beautiful sills.

Rolscreen Features

1. Rolscreen Guide
2. Rolscreen Lug
3. Rolscreen Re-enter Feature
4. Rolscreen Roller Assembly
5. Rolscreen Floating Roller
6. Rolscreen Recessed End and Welded Construction
7. Rolscreen Invisible Cloth
8. Friction Block
9. Automatic Latch

DeLuxe ROLSCREEN Heavy Duty Type



Two features added to standard construction at slight extra cost

Added Features
(10) Roller Bearing Roller
(11) DeLuxe Operating Bar with Rubberized Felt Sill Contact

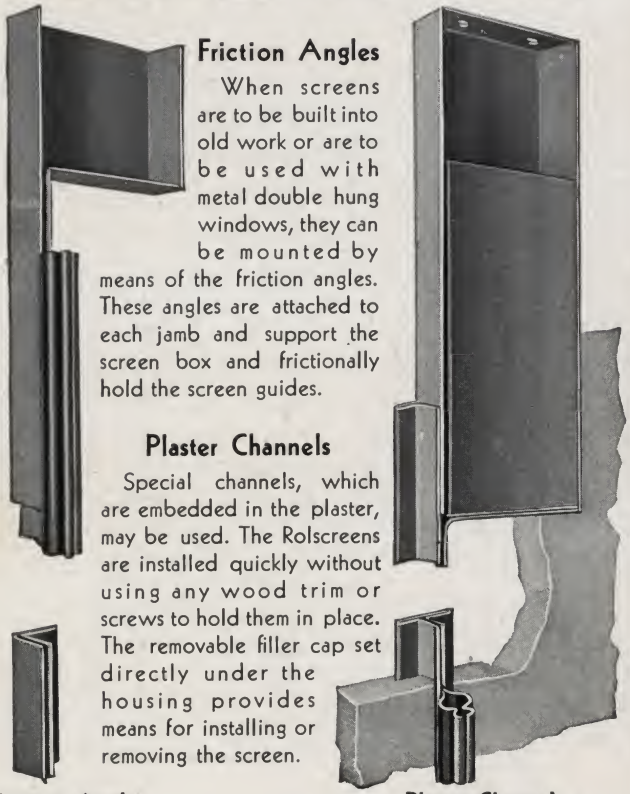
ROLSCREEN MOUNTINGS

Friction Angles

When screens are to be built into old work or are to be used with metal double hung windows, they can be mounted by means of the friction angles. These angles are attached to each jamb and support the screen box and frictionally hold the screen guides.

Plaster Channels

Special channels, which are embedded in the plaster, may be used. The Rolscreens are installed quickly without using any wood trim or screws to hold them in place. The removable filler cap set directly under the housing provides means for installing or removing the screen.



Friction Angle **Plaster Channel**

ROLSCREEN SPECIFICATIONS

(A) SCREENS

Screens shall be *(DeLuxe) (Standard)* Rolscreens as manufactured by the Rolscreen Company, Pella, Iowa.

(B) WORK INCLUDED

Note:—List and locate either in schedules on plans or in specifications under this heading. If both double hung and casement windows are included list or schedule each under separate subheading.

(C) MATERIALS AND CONSTRUCTION

(C-1) Metal—Housing, guides and locking bar shall be constructed of heavy lead-coated terne plate.

(C-2) Wire Cloth—Screen wire shall be 16 mesh rust-proofed "AluminA" with triple selvage. The screen cloth shall have lugs spaced at regular intervals along the two edges which shall be engaged by the tubular guides.

(C-3) Metal Housing and Roller Assembly—The screen cloth shall be attached to a steel roller encasing a heavy, thoroughly lubricated, oil-tempered spring. The roller shall be *(roller bearing)* contained in a metal housing 2⅝ in. square. (2⅞ in. if opening is over 84 in.) Roller mounting shall be of floating type which allows roller to automatically move forward as size of screen roll reduces, eliminating "drag" of screen wire on lower edge of roller housing.

Note:—*Omit "roller bearing" on Standard Rolscreen.*

(C-4) Guides—The jamb guides shall be so mounted that they are slidably adjustable when the screen is raised or lowered to compensate for any expansion or contraction in the window frame. The guides shall be provided with lips at their upper ends inserted into slots in the roller housing (to assure proper alignment) with the beaded portion cut away adjoining the housing to allow the screen wire to re-enter the housing when accidentally knocked out of the guides.

(C-5) Spring Catches—Spring catches shall be attached to the lower end of the guides carefully adjusted to automatically lock the cross bar of the screen close to the sill.

(C-6) DeLuxe Operating Bar—Provide DeLuxe Operating Bars with rubberized felt sill contacts.

Note:—*Omit with Standard Rolscreen.*

(D) WOOD JAMB STOPS

The wood stops, to which the screen guides are fastened and which support the roller housing, shall be furnished and installed with stop screws and washers by others ready for the screen installation.

Note:—*Omit if plaster jamb channels or friction angles are included.*

(E) PLASTER JAMB CHANNELS

Rolscreen guides and housing shall be mounted on plaster jambs in Rolscreen Plaster Channels set in position before plastering. Channels shall be set absolutely plumb and true on each jamb and accurately on some "full inch" dimension back to back.

Note:—*Omit if wood jamb stops or friction angles are included.*

(F) FRICTION ANGLES

Friction angles shall be mounted on the jambs or window as detailed and shall be set true and plumb. They shall receive and hold in position the Rolscreen housing and guides.

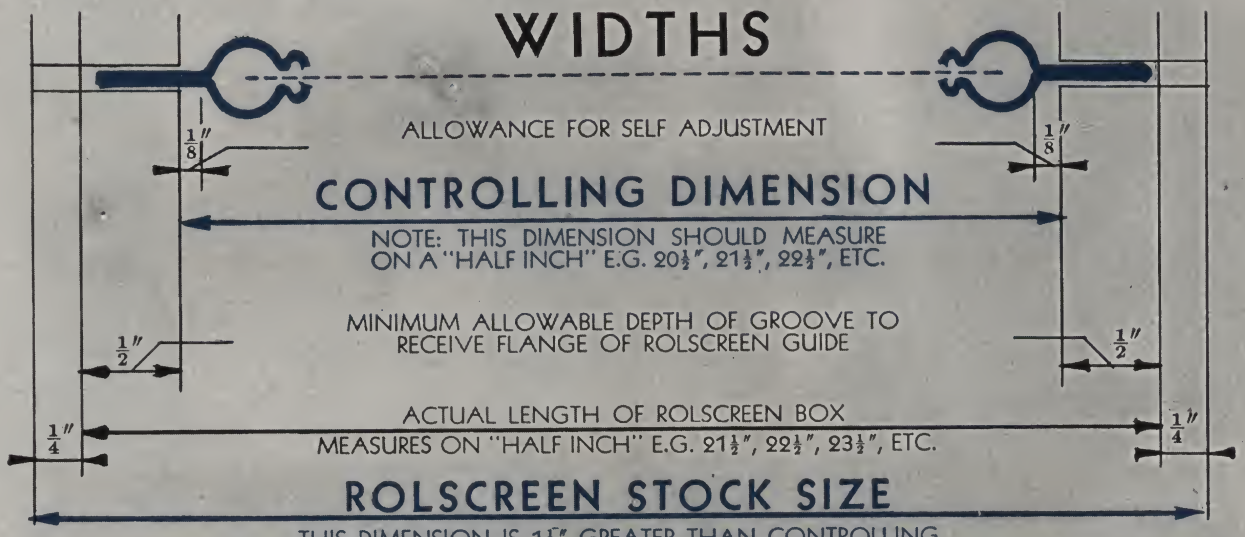
Note:—*Omit if wood jamb stops or plaster channels are included.*

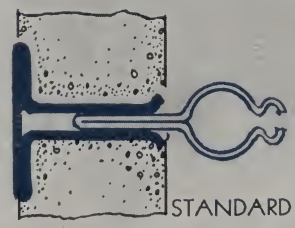
(G) INSTALLATION

Rolscreens shall be accurately installed in strict accordance with the manufacturer's erection instructions. Guides shall be so mounted that the beaded portions and outside edges of guides shall not be in contact with window jambs. Entire installation shall be made so screen operates freely and easily.

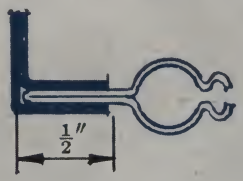
FULL SIZE SECTIONS

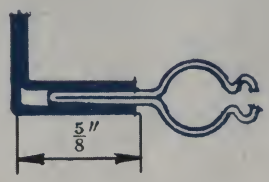
WIDTHS

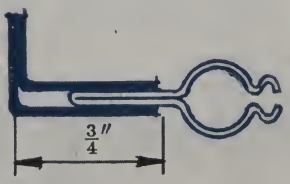


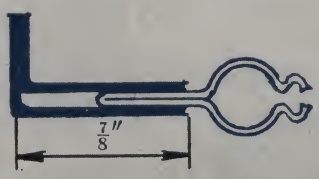


PLASTER CHANNEL





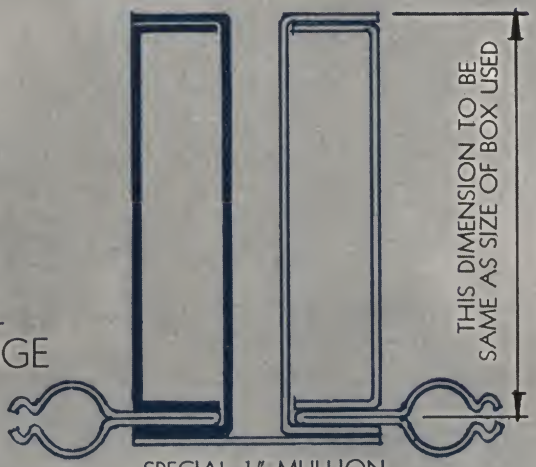




STANDARD
FRICTION ANGLES



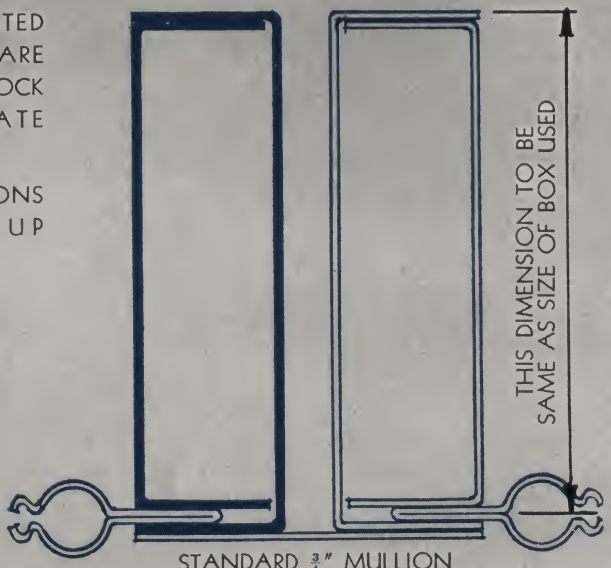
SPECIAL
WIDE FLANGE
GUIDE



SPECIAL ½" MULLION

SECTIONS NOTED "STANDARD" ARE CARRIED IN STOCK FOR IMMEDIATE SHIPMENT.

SPECIAL SECTIONS ARE MADE UP PROMPTLY.



STANDARD ¾" MULLION
MULLION

FULL SIZE SECTIONS

DETAILING INFORMATION

Widths—

Rolscreens are built in standard stock sizes in each "given" full inch width from 11" wide to 61" wide. This full inch width is arrived at by using stops ¾" thick. The standard stock sizes can be adjusted to all fractional inch openings by increasing or decreasing the thickness of these stops. (Refer to size control on opposite page.)

Heights—

Heights are taken from the top of the Rolscreen housing to what will be the top of the finished sill.

For openings not over 84" high,—
The standard 2⅝" housing is recommended.

For openings over 84" high,—
The special 2⅞" housing **must** be used.

For openings not over 52" high,—
The special 2⅛" housing **may** be used.

For openings not over 36" high,—
The special 1⅞" housing **may** be used.

Note:—Due to limitation of spring length, screens from 14" wide to 18" wide cannot be furnished over 75" high. Widths from 11" to 13" cannot be over 52" high.

Plaster Channels—

Plaster Channels are used in openings where only plaster and no wood trim is desired. They **must** be set and plumbed to a Rolscreen "full-inch" dimension. They will serve as grounds for plaster.

Friction Angles—

Friction Angles are used in new or old construction and also in metal jamb windows. They are attached directly to the face of the jambs. They are made in varying depths as shown, so as to adapt Rolscreens of standard size to fractional inch widths. In ordering give exact opening width and proper sizes of angles will be furnished.

Metal Mullions—

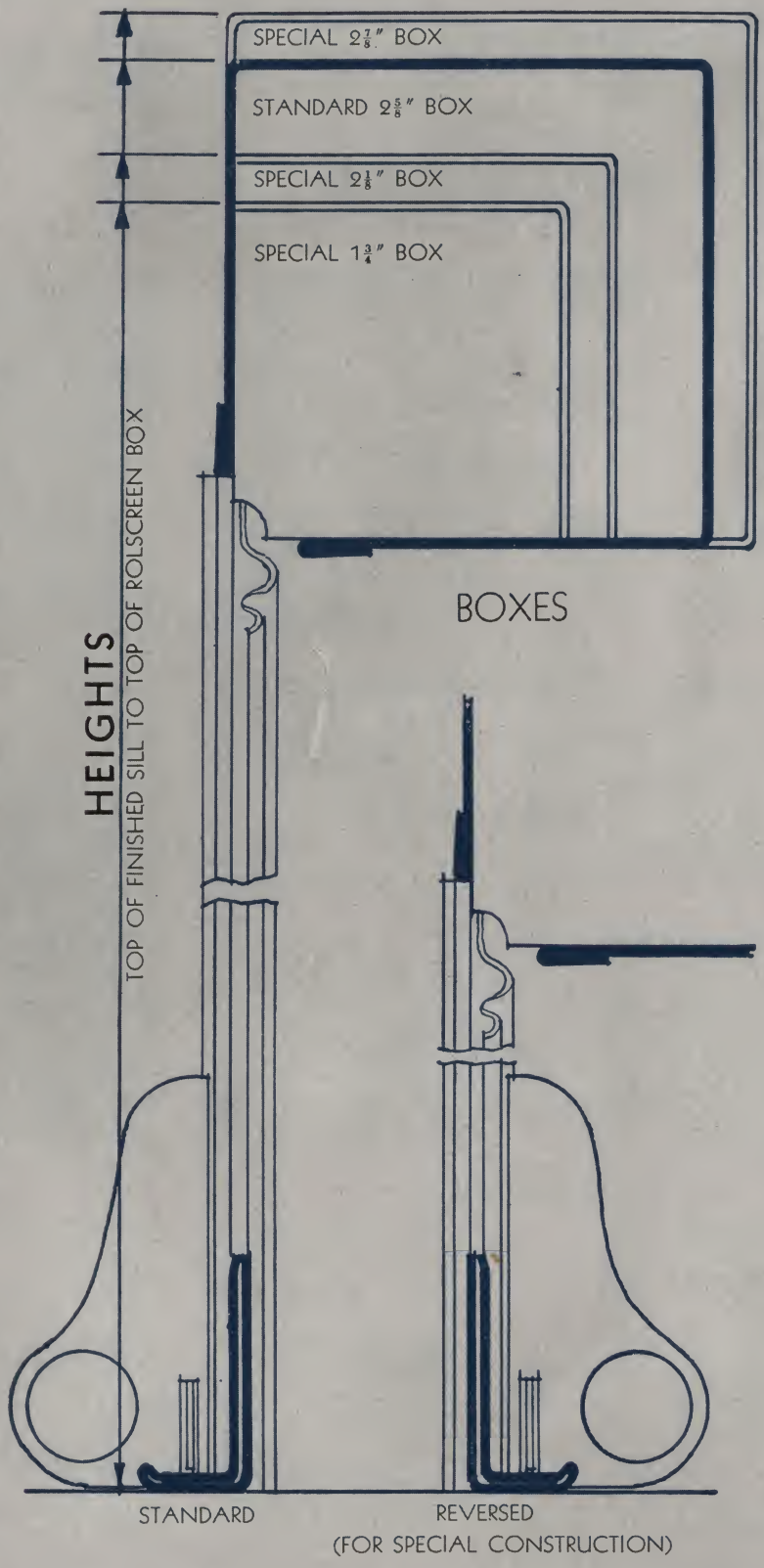
Metal Mullions can be furnished by the Rolscreen Company for all sizes of Rolscreen housings. Double mullions are used when a screen is to be installed on each side, and are built to any specified width to take up fractions in opening dimensions. Single mullions are used when a screen is to be installed on one side only.

Wood Mullions—

Wood Mullions of simple design can be used when openings require.

Wide Flanged Guides—

Special wide flanged guides can be furnished to meet unusual conditions.

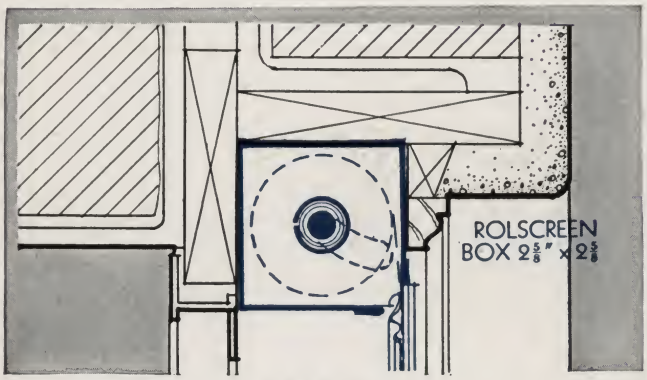


LATCH AND LOCKING BAR

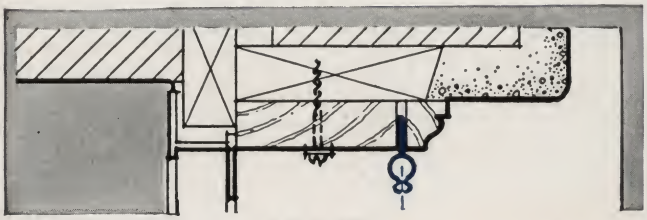
Rolscreens
TRADE MARK

STEEL CASEMENTS

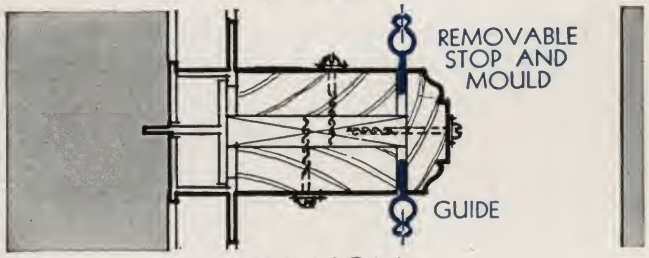
SEMI-WOOD TRIM



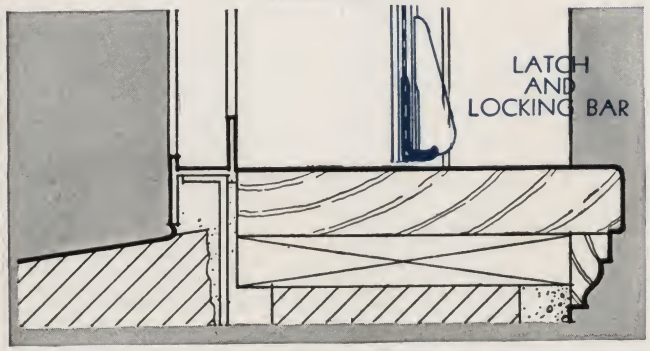
HEAD



JAMB



MULLION



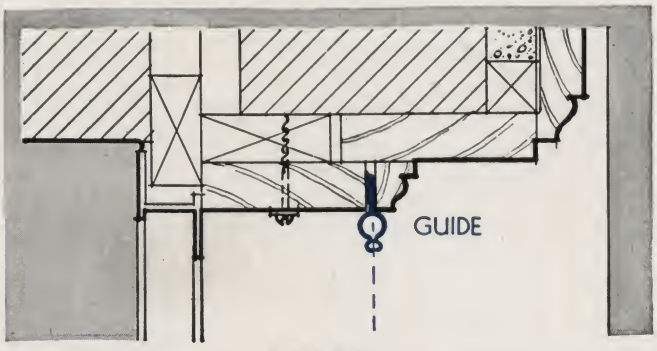
SILL

Rolscreen can be instantly removed in case of damage by taking out removable stops and moulds at jambs

WOOD TRIM



Rolscreens allow a new freedom to window opening and a new beauty in complete screen protection. › ›



JAMB

Thickness of removable stops and moulds may vary. Read instructions carefully on page No. 5 for width dimensions. › › › › › › › › › ›

REFER TO PAGES 5 AND 6 FOR SIZE CONTROL OF STANDARD STOCK SIZES

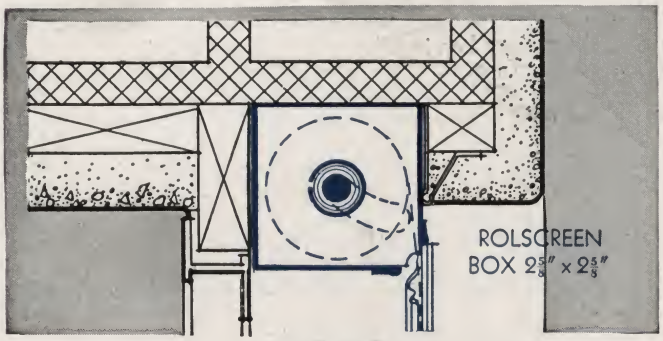
Rolscreens TRADE MARK

STEEL CASEMENTS

BLOCK CONSTRUCTION



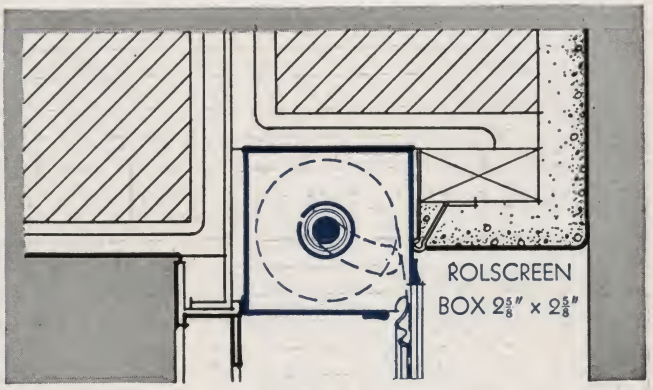
The Rolscreens do not mar the beauty or hinder the operation of casement sash. » » » »



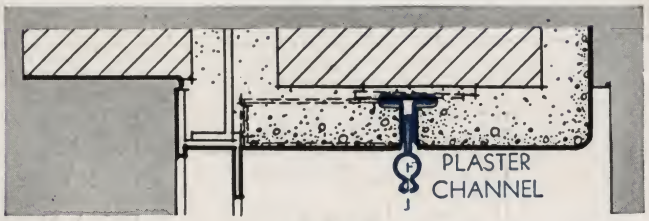
HEAD

A metal recess 2½"x5½"x¾" with removable cover is attached to upper part of plaster channel to permit Rolscreen box to be inserted. » » » » »

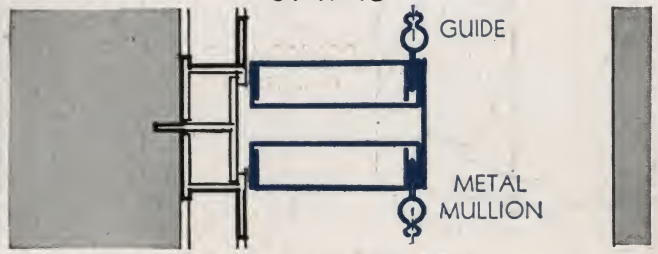
MASONRY CONSTRUCTION



HEAD



JAMB



MULLION



SILL

Plaster channels should be set to some exact full inch Rolscreen dimension "back to back" and plumbed. They serve as plaster grounds. » » » » »

REFER TO PAGES 5 AND 6 FOR SIZE CONTROL OF STANDARD STOCK SIZES

RECOMMENDED ROLSCREEN SIZES

For Standard Steel Casements of Various Manufacturers

"Z" BAR TYPES		Rolscreen Widths				Rolscreen Heights				
		1 Lt. Wide	Single Units	Double Units	Triple Units	2 Lts. High	3 Lts. High	4 Lts. High	5 Lts. High	6 Lts. High
ARISTON Standardized	a	13"	19"	37"	55"	28"	40¼"	52½"	64¾"	77"
BAYLEY-SPRINGFIELD	b	11"	20"	39"	55"	29⅜"	41⅝"	53⅛"	66⅛"	78⅜"
CAMPBELL 100 Series	c	11"	20"	39"	58"	25⅞"	37⅝"	49⅛"	62⅝"	74⅛"
CRITTALL STANWIN	d	11"	20"	39"	58"	26⅛"	37⅝"	51¼"	62¾"	74¼"
FENESTRA FENWROUGHT	e	13"	19"	37"	55"	27¾"	40"	52¼"	64½"	74"
GENFIRE Model No. 5	f	13"	19"	37"	55"	27¾"	40"	52¼"	64½"	76¾"
HOPE Standard	g	11"	20"	39"	58"	26½"	37⅞"	49⅜"	62¼"	
LEMCO Standard No. 100	h	11"	20"	40"	61"	25⅞"	37½"	49"	62¾"	74¼"
LUPTON Residence	i	11"	20"	39"	58"	25¾"	37⅜"	48¾"	62½"	73⅞"
SOULÉ Residence	j	14"	20"	38"	56"	28⅝"	41"	53¼"	65⅝"	77⅞"
THORN Residence	k	11"	20"	39"	58"	26⅜"	37¾"	49"	60⅜"	71⅝"
TRUSCON Model No. 5	n	13"	19"	37"	55"	27¾"	40"	52¼"	64½"	76¾"
EQUAL LEG CHANNEL TYPE										
CAMPBELL 400 Series	c	11"	20"	39"		26¾"	38"	49¼"	60½"	
CRITTALL NORMAN	d	11"	19"	38"	58"	26⅛"	37½"	48⅞"	60¼"	
FENESTRA FENCRAFT	e	13"	19"	38"		27⅜"	38⅝"	49⅞"	61⅛"	72⅜"
INTERNATIONAL COTSWOLD	o	11"	20"	39"		26¼"	37⅞"	49⅜"	60⅞"	
LEMCO Standard No. 700	h	11"	20"	40"	61"	25⅞"	37½"	49"	62¾"	74¼"
THORN MANOR	k		20"	40"	60"	26⅝"	37⅞"	49¼"	60½"	

Product of: a. Michel & Pfeffer Iron Works. b. The William Bayley Co. c. Campbell Casement Window Corp. d. Crittall Casement Window Co. e. Detroit Steel Products Co. f. Genfire Steel Co. g. Henry Hope & Sons Inc. h. Lundell-Eckberg Mfg. Co. Inc. i. David Lupton's Sons Co. j. Soulé Steel Co., United States Metal Products Division k. J. S. Thorn Co. n. Truscon Steel Co. o. International Casement Co. Inc.

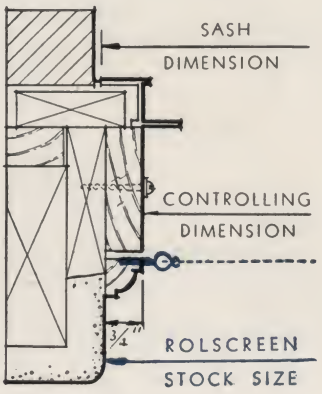


FIG. I

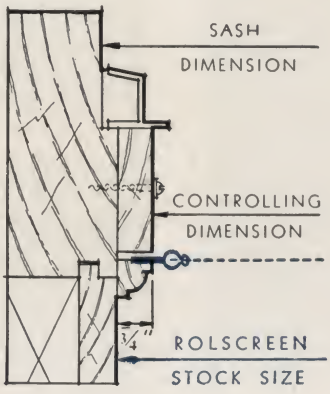


FIG II

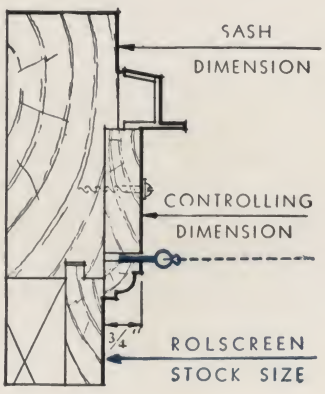


FIG III

Schedule Sizes "Z Bar" Type—Recommended Rolscreen sizes in the above schedule are based on installation as shown in Fig. I. "Equal Leg" Channel Type—Recommended Rolscreen sizes are based on Fig. II. Where it is desired to set removable stop in rebate in frame, as shown in Fig. III, Rolscreens 1" wider than widths given in schedule must be used.

Controlling Dimension The Controlling Dimension should in all cases measure on the "HALF INCH," i. e., 18½", 19½", 20½", etc.

Rolscreen Stock Size The Rolscreen Stock Sizes measure on the "FULL INCH," i. e., 20", 21", 22", etc. This stock size dimension is just 1½" greater than the controlling dimension and is arrived at by adding a standard ¾" stop on each jamb, or the depth of a pair of plaster channels to this controlling dimension.

Thickness of Stops Thickness of Stops and depth of rebates for sash, (Fig. II) or depth of rebates for stops, (Fig. III) may vary to suit conditions so long as stops are not less than ½" thick and control measurement (face to face of stops) is on any "Half Inch."

Plaster Channels Plaster Channels must be set on exact "FULL INCH" back to back, to conform to size control and standard stock sizes.

Heights Height dimensions given in schedule are taken from what will be the top of box to top of finished sill.

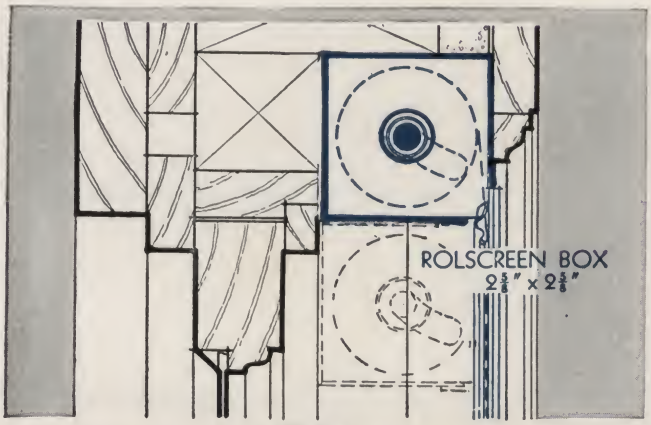
Widths of Stops Width of stops set under box and onto which guides are fastened must be just ⅛" less than box size used, i. e., 2¾" stops for 2⅞" box, 2½" stops for 2⅝" box and 2" stops for 2⅛" box.

REFER TO PAGES 5 AND 6 FOR SIZE CONTROL OF STANDARD STOCK SIZES

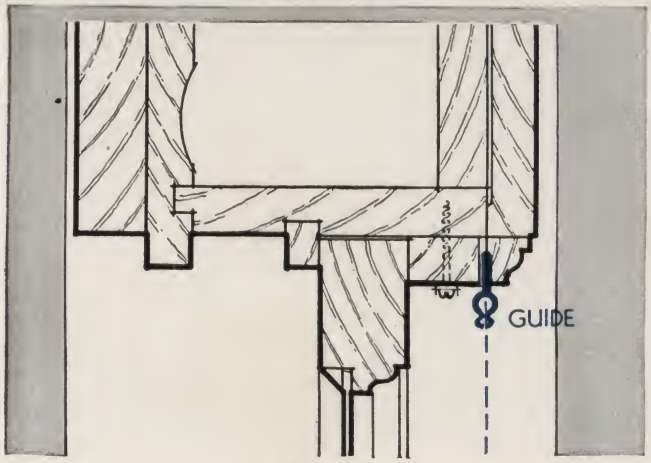
Rolscreens TRADE MARK

DOUBLE HUNG WINDOWS

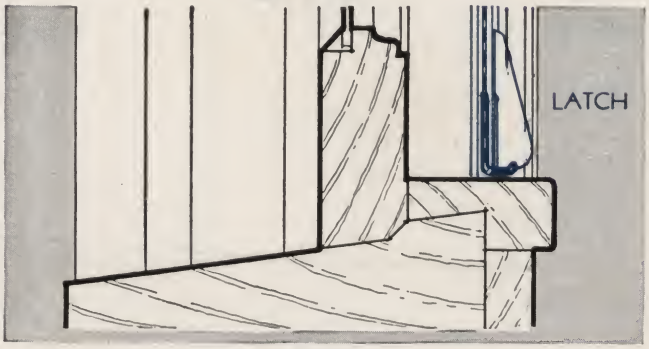
FRAME CONSTRUCTION



HEAD



JAMB



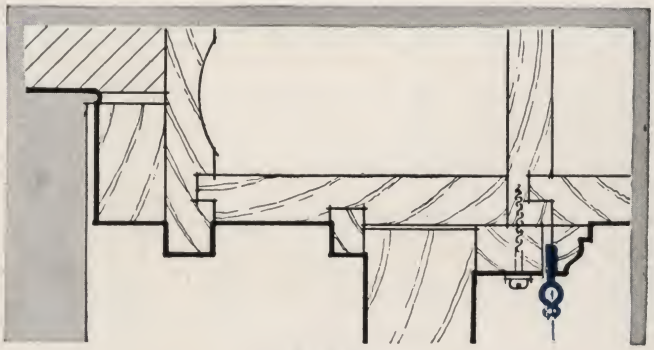
SILL

Rolscreen box may be set directly under head jamb as dotted in and a standard double hung frame used. »

MASONRY CONSTRUCTION



The rich sparkling lustre of fine glass and the exterior window beauty is not dimmed by screens. » » »



JAMB

Lift hardware on bottom rail of sash should be held to a minimum projection to clear locking bar on screen.

REFER TO PAGES 5 AND 6 FOR SIZE CONTROL OF STANDARD STOCK SIZES

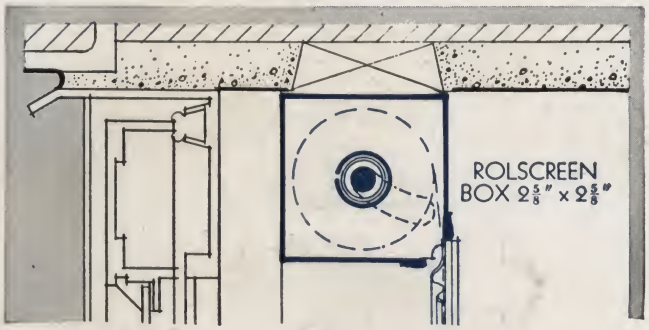
Rolscreens TRADE MARK

METAL WINDOWS

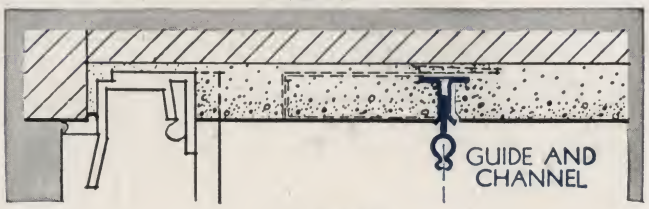
DOUBLE HUNG BROWNE WINDOWS



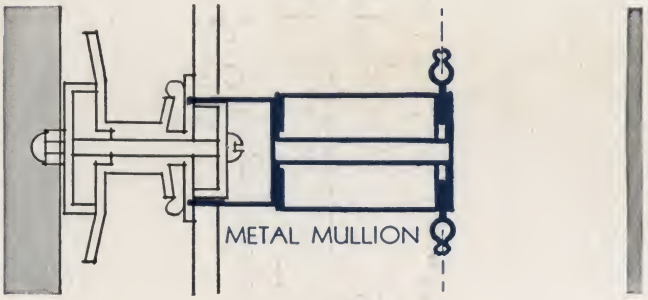
No lovelier example of dignity and charm. All homes can boast such windows unmarred by screens. » »



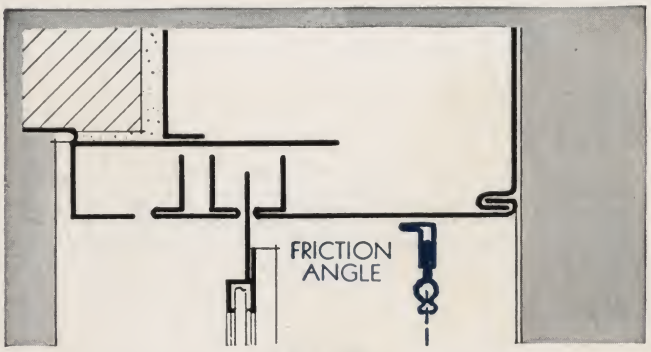
HEAD



JAMB

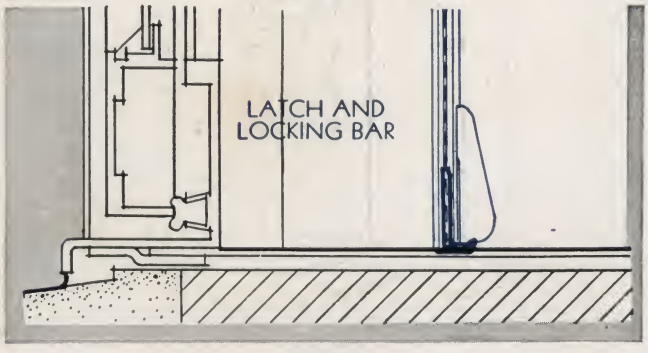


MULLION



JAMB

For metal double hung windows we recommend friction angles as shown in full size on page 5. » » »



SILL

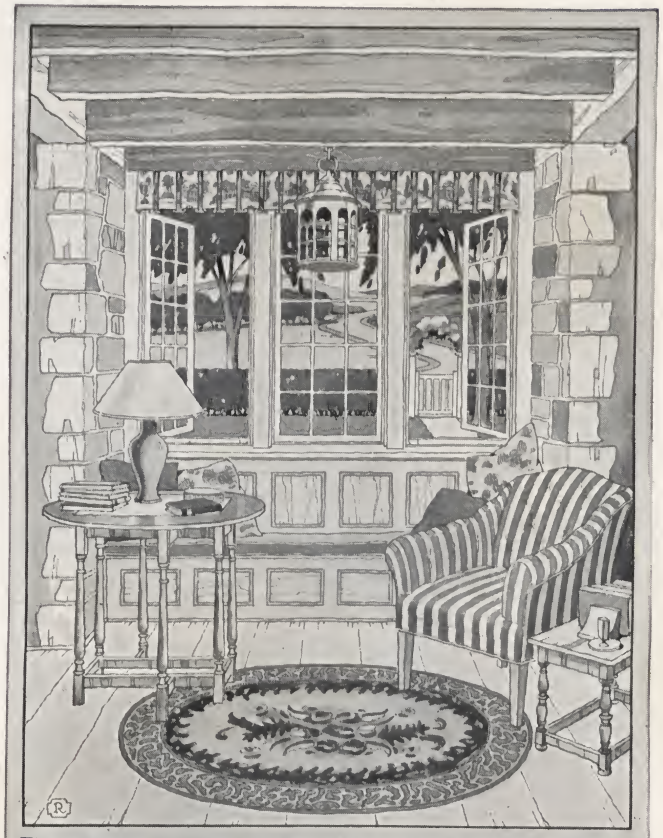
Special details showing wood trim installation for Browne Windows can be furnished by Rolscreen Company. » » » » » » » » »

REFER TO PAGES 5 AND 6 FOR SIZE CONTROL OF STANDARD STOCK SIZES

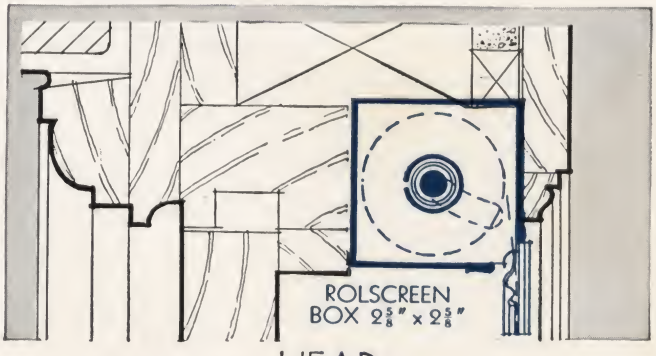
Rolscreens TRADE MARK

WOOD CASEMENTS

HOFFMAN TYPE SASH



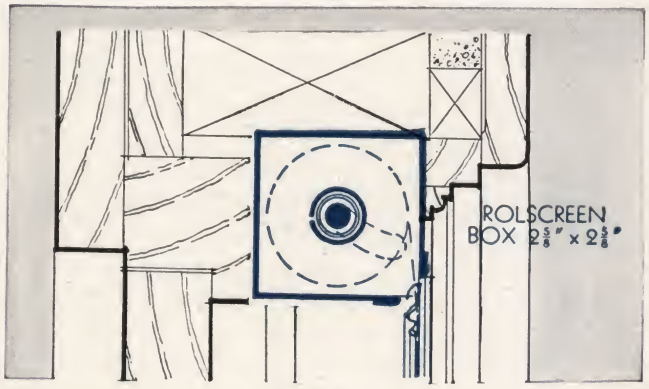
The absence of the screen when the window is closed completes the quiet, architectural dignity.



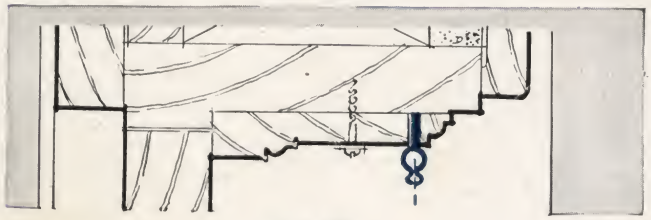
HEAD

If Rolscreen box is set against sash, the casement hardware at head can be attached to Rolscreen Box.

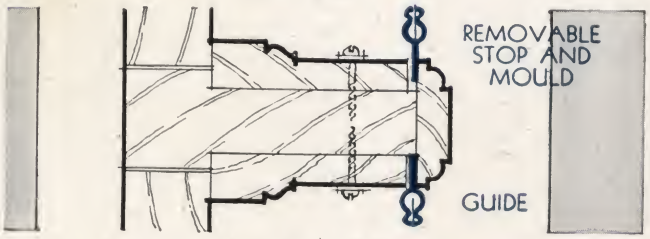
HINGED SASH



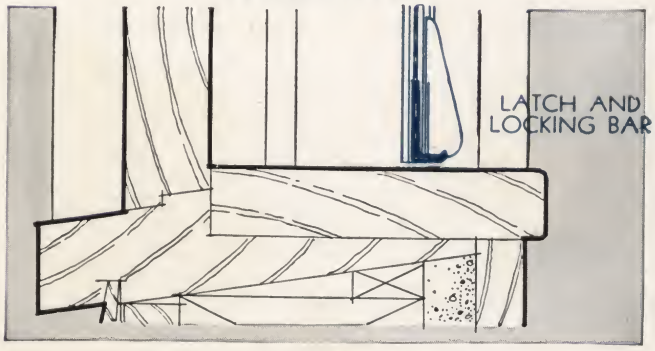
HEAD



JAMB



MULLION



SILL

1⅜" thick sash are shown on the detail. If 1¾" thick sash are used the Rolscreen box serves as stop at the head.

REFER TO PAGES 5 AND 6 FOR SIZE CONTROL OF STANDARD STOCK SIZES

ROLSCREENS

the

STANDARD OF COMPARISON

in

Modern Window Screens



ROLSCREEN COMPANY

PELLA ***IOWA***

CABLE ADDRESS "ROLSCREEN"

NEW YORK
PITTSBURGH
DETROIT
SYRACUSE
DES MOINES

PHILADELPHIA
BALTIMORE
CLEVELAND
ROCHESTER
MILWAUKEE
SAN FRANCISCO

BOSTON
WASHINGTON
CINCINNATI
GRAND RAPIDS
OKLAHOMA CITY
LOS ANGELES

CHICAGO
HARTFORD
ATLANTA
INDIANAPOLIS
KANSAS CITY

Dealers Everywhere—Distributors in All Principal Foreign Countries

MacCORMACK ROLLING WINDOW SCREENS

All Types of Bronze Frame Screens for Windows, Doors and Porches

Manufactured by
ROLLING SCREENS, INC.

Jay and Nassau Streets (at Manhattan Bridge Plaza)
BROOKLYN, N. Y.

Product

MacCormack Rolling Window Screens.

Also Bronze Frame Fly Screens for all types of windows, doors and special conditions.

MacCormack Rolling Window Screens

Are manufactured from 24-gauge terne plate metal, thoroughly baked inside and outside with Hilo enamel, the final finish matching the window trim.

Pure bronze wire screen cloth 18-mesh, specially drawn, evenly woven, with strong selvage edges and great tensile strength, makes our rolling screens strong and durable.

They are operated with flexible side tapes (not by a spring roller) designed to take the strain off the screen cloth, thereby giving smooth operation and long satisfactory service.

In rolling window screens you will find a wide range of quality in materials and workmanship as well as experience and responsibility of manufacture.

If you are in doubt, ask for a demonstration of the actual screen itself.

MacCormack Regular Bronze Frame Screens

The frames are drawn into shape from seamless tubing (and not from flat sheets of metal bent up) with solid die cast reinforced corners, rewireable feature, using 16 or 18-mesh bronze wire cloth.

Installation and Service

MacCormack Rolling Window Screens are readily installed for either casement or double hung windows.

While these details show our screen exposed, the smallness of the case permits the complete concealment of our entire frame without weakening the window frame construction.

Our screens are completely assembled at the factory, with the baked enamel finish applied, so that the time required for installation on the average sized job rarely exceeds one or two days.

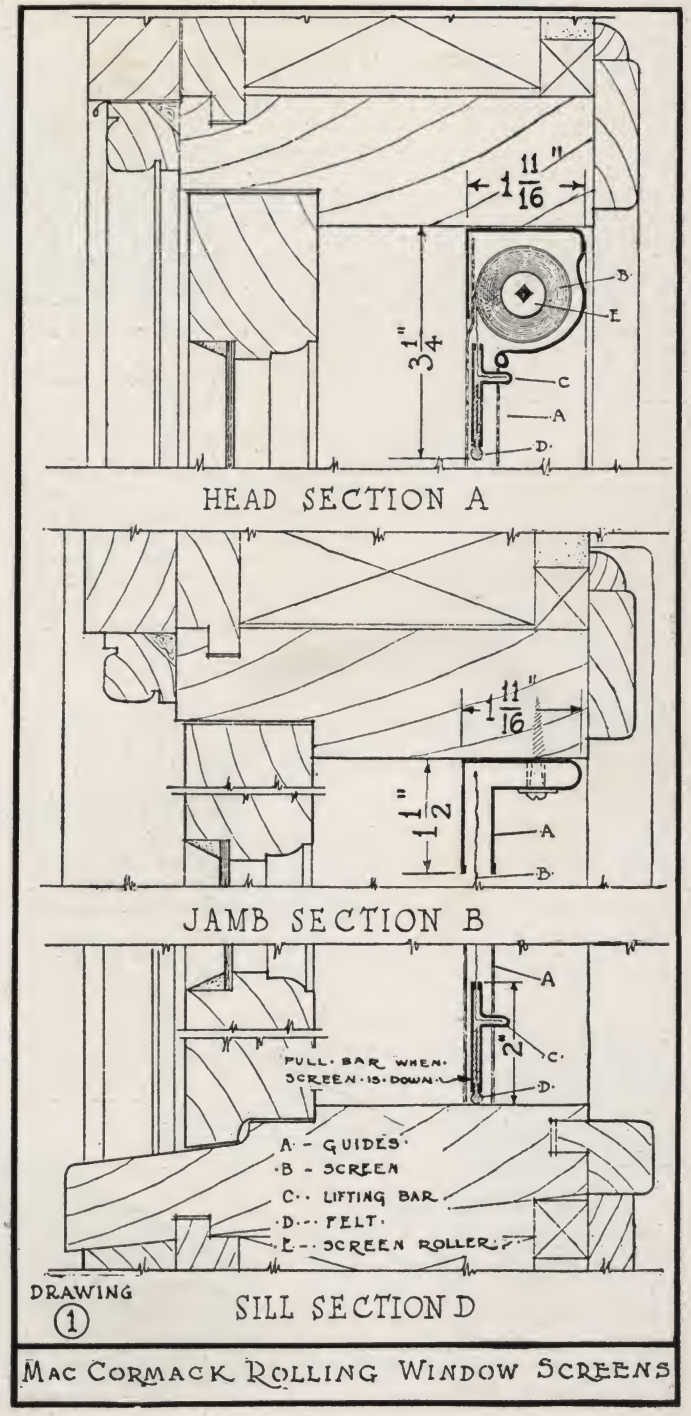
Having our factory and main office centrally located in the heart of New York City enables us to give very quick service and prompt delivery by our own trucks within a radius of one hundred miles.

During the past twenty years we have made thousands of installations in exclusive residences from coast to coast, and many of these have come to us either through architects' specifications or present users' recommendations. We always prefer to work with and through the architect because, as a rule, he shows appreciation of quality and service.

Complete drawings, ready for filing in your A.I.A. file, under section 35-P-1, showing various methods of installing MacCormack Rolling Window Screens in various types of windows, will be sent upon request.

Explanation of Drawings

Drawing No. 1 shows casement window opening out, with rolling screen inside on flat jamb.



WATSON MANUFACTURING COMPANY INC.

Manufacturers of Metal and Wood Frame Window. Door and Porch Screens

EXECUTIVE OFFICE AND FACTORY

630 Taylor Street, JAMESTOWN, N. Y.

For Watson Metal Office Furniture, see Manufacturers' Index

Products

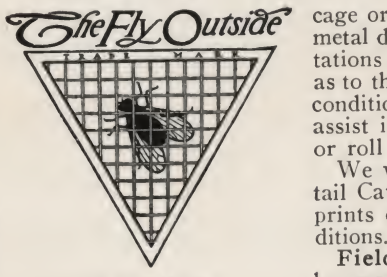
SCREEN DOORS, in Metal and Wood.
WINDOW SCREENS, in Metal and Wood.
ROLL SCREENS, Twentieth Century and Efficiency.
SCREENS for special conditions, porches, courts, etc.

Other Products

Auxiliary or Interchangeable Storm Sash—These sash are made to interchange with screens without changing hardware and are furnished glazed or unglazed and with various types of weathering strips. Write for complete information

Venetian Blinds—There is a type of Watson Venetian Blind to fit any window condition; including Single and Double Lift, Ratchet and Plain Roller, and Traverse Roller types. Material, finish, width of slats, colors, kinds of tape, etc., are used according to requirements of the best quality obtainable. Detailed information or catalogues furnished on request.

Access Wall Panels—Made entirely of metal, installed flush with the wall surface and are provided to permit easy access to valves, plumbing and electrical equipment, etc. Made in variety of sizes and finishes as required and are very inexpensively installed. Information on request



TRADE-MARK



Executive Office and Factory, Jamestown, N. Y.

Experience and Facilities

Watson products reflect over 40 years of experience in development and production of superior quality insect screens. Original patentees of rewirable frames, this company has pioneered in the development of and holds patents on many valuable features of present-day screen construction. We keep abreast of the times by using modern processes, materials, finishes, etc. Our factory is equipped with the most modern machinery, much of it specially designed. Our central location provides ideal shipping facilities.

Service

Engineering—We are prepared to screen any new or existing conditions and offer advice and suggestions based upon experience. Because we manufacture all types of roll, flat, cage or irregular metal or wood frame screens and metal doors, we are not influenced by factory limitations or business interests in our recommendation as to the most practical methods of screening each condition. Our Engineering Department will gladly assist in preparing details for any kind of frame or roll screens to fit any particular problem

We will gladly send on request, Architects' Detail Catalogue, General Catalogue for Users, blue prints or scale drawings covering many sash conditions.

Field—Is provided by local dealers, competent by experience to assist architects in the preparation of specifications and in the selection of the most suitable material and type of screen to be used.

Fundamental Considerations

(1) Suitable framework or surface at top, bottom and sides to which screens can be attached should be provided. A rabbet is desirable for all fixed or hinged screens.

(2) Blinds, shutters, doors, flower boxes, curtains, draperies, electrical fixtures, hardware, etc., should not be allowed to encroach on the space provided for screens, or to prevent proper installation and operation of window screens or screen doors.

Porch Screens—The screening of most porches involves careful consideration of design to properly fit the screens around columns and many other varying conditions. Our many years of experience in solving such problems enables us to offer practical suggestions for their solution.

Wire Cloth

16 mesh, regular weight, commercial bronze wire cloth is standard for all screens except as otherwise noted. Heavy bronze cloth, as well as wire cloth of other metals and other meshes, can be supplied when required.

Hardware

A complete line of hardware to meet all needs, selected for quality and adaptability, is furnished with all screens and screen doors in various finishes as conditions and purchaser's preference requires.

WATSON ALL-METAL SCREEN DOORS

These doors are not large window screens but in all details they are carefully designed door construction, having ample strength, stiffness and durability. Made of bronze, steel, aluminum and other metals, finished in any metal finish or enameled or grained to match trim.

Door Guards—A complete line of suitable guards for screen doors is available for protection to wire cloth.

Extra Heavy Metal Door

The highest grade metal screen door for use in banks, public buildings, residences, etc., where the finest type of door is desired for appearance and hard, continuous service. Very stiff and strong, being 1⅛ in. thick with 3¾-in. stiles. Extra heavy 16-mesh No. 29 O.E. gauge (.0155) oxidized commercial bronze wire cloth is used.

Heavy Metal Door

This door is designed for the main entrance of the finest residences. They are constructed of heavy metal and strongly reinforced. The frames are kept narrow and thin to give maximum area of ventilation, yet with sufficient strength to adapt them to almost any service.

Medium Weight Metal Door

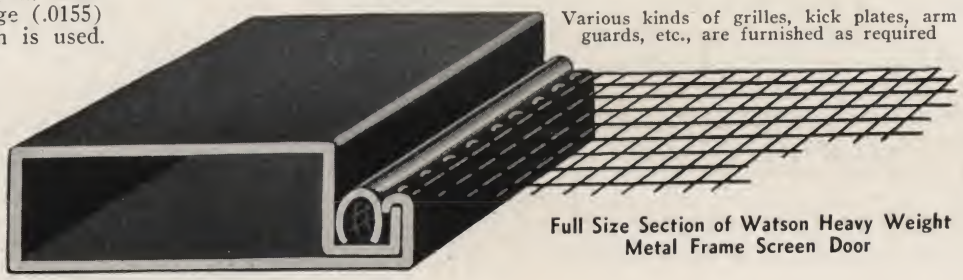
Has same appearance as the Heavy Metal Door but is made of lighter material, with less expensive hardware. Material and workmanship is as good in all respects. Suited for ordinary residential use or where service is not exceptionally severe.

Light Weight Metal Door

The lightest and least expensive Watson metal door. It is of the same general appearance as the Medium Weight Door.

Will be found serviceable for French doors or other residential doors not subjected to hard usage.

Various kinds of grilles, kick plates, arm guards, etc., are furnished as required

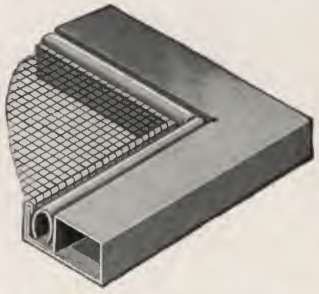


Full Size Section of Watson Heavy Weight Metal Frame Screen Door

WATSON METAL FRAME SCREENS

The special feature of our metal frame screens is the solid tubular construction, having great strength, stiffness and rigidity. The metal is so distributed that it gives the greatest strength where needed. The wiring edge is rounded, preventing cutting of the wire cloth. The double walls of the groove are brazed or welded together, which gives extra strength to take up the strain of the wiring and prevents twisting of the frame. Made in 1, 1½ and 2-in. frames.

Twentieth Century Screens—Made in bronze, steel, or other metals. Corner is so constructed that it is actually stronger than the frame itself. It is reinforced by a patented solid-web channel angle reinforcement sweated to the adjacent tubular frame sides in assembling.



Corner of Metal Frame Screen

Efficiency Screens—Made in steel only. Have the same section as the Twentieth Century but are a welded construction. These are high-grade, sturdy screens.

Bronze Frame Screens (Rustproof)—Frame, hardware and wire cloth are of commercial bronze which contains no steel or iron and cannot rust. They can be finished in any of the bronze, brass or copper finishes or if left unfinished will oxidize to a statuary bronze color.

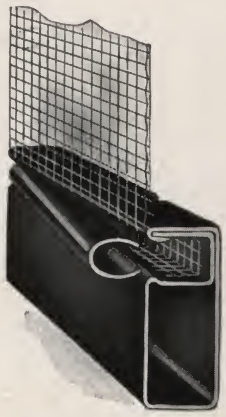
Steel Frame Screens—Manufactured from a special quality, copper-bearing, open hearth steel, coated with a mixture of lead and tin.

After fabrication, the entire frame is electro-galvanized by the hot cyanide process, to give further protection against rust. The frames are then finished with pyroxylin lacquer (duco or equal) synthetic or baked on enamels in any color, or grained to match selected woods.

Other Frame Metals—Aluminum, Monel and other nickel and copper alloys, stainless steel, zinc alloys, etc. are also used.

Identification Number

Each screen is permanently numbered and a corresponding number is attached to the window opening.

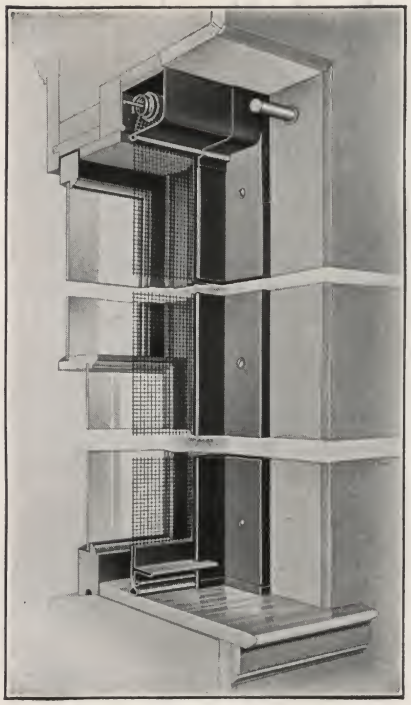


Full Size Section of Metal Frame

Showing method of wiring, resilient split tube and rounded edge and double strength wiring groove

WATSON ROLL SCREENS

We believe we are the oldest manufacturers of roll screens. All of our experience of over a quarter of a century has been embodied in our present roll screen construction, many features of which are patented and used only by us. We invite comparison of material finish and mechanical construction with any other roll screen.



Twentieth Century Roll Screen

Materials and Finishes—Watson Roll Screens are made in bronze, steel or other metals, finished to match interior hardware and fixtures or enameled any color or grained to match interior trim.

Installation Details—We have many detailed drawings showing various methods of installing roll screens under almost any conditions. These will be sent on request.

The Twentieth Century Roll Screen

This roll screen has been well known to architects for many years. It is our oldest and best construction and deserves the reputation gained by years of satisfactory service.

The operating bar will stay at its lowered position or at any desired height without the use of catches or bolts. It is noiseless in operation and cannot tilt or jamb.

The wire is held tight and smooth by a spring, which however, has nothing to do with raising or lowering the screen.

Operation is very easy as there is no spring resistance to be overcome.

Screens are shipped complete, the side guides, roll case and operating bar being completely assembled.

Wire cloth is 16-mesh, special weight bronze which rolls easily and smoothly.

Efficiency Roll Screen

Type B—A medium priced, spring roller type of screen of the highest grade, made of best quality materials and workmanship.

Automatic spring catches securely hold the operating bar in its lowered position.

A 2 or $2\frac{1}{16}$-in. square roll case encloses the spring roller which operates on ball-bearings.

A bronze bound fabric cushion strip is inserted in the bottom of the operating bar to protect the window stool and to close out any possible light line.

Wire cloth is 16-mesh bronze.

Type C—These have the same construction and operation as Type B, except that they have plain bearings, "galvanoid" wire cloth and the fabric cushion strip is omitted.



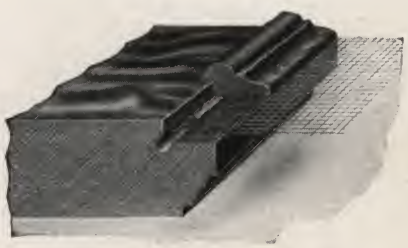
Efficiency Roll Screen

WATSON WOOD SCREENS

For Windows, Doors, Porches, etc.

We manufacture a complete line of wood frame insect screens to meet all requirements. All framework is properly proportioned in thickness and width to insure best appearance and necessary strength. Wood frame screens are usually soft pine, finished with the best paints, enamels, varnishes, etc. as desired, in any selected color.

We also make them of any fine wood, finished in any natural or stained colors.



Section of Wood Screen Door

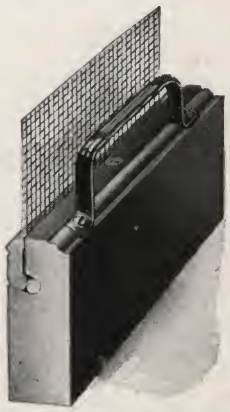
Each strand of wire cloth securely held by spline in groove and covering moulding

Frames are of selected woods, carefully seasoned and kiln dried. Great strength and rigidity are secured by our dowel corner construction and the use of waterproof glue.

Rail is cope cut to fit mouldings of the stile, providing additional gluing surface.

Wire cloth is fastened in a groove in the rabbet, so located as to retain the greatest amount of strength at edge of frame.

Suitable hardware, selected for quality and adaptability, in a variety of styles and finishes, is furnished.



Section Through Wood Window Screen

F. J. KLOES, INC.

ESTABLISHED 1872

269 Canal Street, NEW YORK, N. Y.

AWNINGS

This Company is backed by an experience of 50 years in the manufacture of Awnings of various types for a great variety of uses.

Our specialties include, Kloes Disappearing Flexible Folding Awning Outriggers and Kloes Built-in Gear Roller Awning Mechanisms in various sizes and forms for store fronts, porches, promenades and large open terraces for country clubs, etc. Hand or motor operation is available in all types.

We have, for many years, also maintained a shade department, producing an unexcelled line of Window Shades and Curtains, also Sidewalk Canopies.

Architects and owners are invited to consult us on awning, canopy or shade problems.

FLEXIBLE FOLDING AWNING OUTRIGGERS

In the construction of a complete awning installation, some kind of outrigger framework is required to carry the awning canvas when in extended position. This framework consists essentially of a front bar and two or more outriggers. The front bar, to which the outer edge of the awning canvas is attached, is itself attached to the projecting end of each outrigger. The wall ends of the outriggers are pivoted to hinges which are attached to the window framing or to side piers or they are placed within recesses (provided by others) so that the outriggers, when folded, are concealed. When the awning roller is turned, the canvas is released from the roller and the framework drops out and down to extended position.



Corner of a Large Building Having Twenty Store Fronts All Equipped with Kloes Flexible Awning Outriggers

Note the very compact cornice construction in which the awning roller mechanism is located. When in raised position these awnings are entirely out of sight

Store front awnings when extended should be at least 6 ft. 6 ins. clear of pavement and to properly shade the display windows, the front bar should be extended six, seven or eight feet forward, from the face of the window. Where a store front is sufficiently high to permit having the awning roller space 12 ft. 6 ins. or more above pavement, straight pivoted outriggers are serviceable, which we can provide if so required.

Kloes Flexible Folding Outriggers have been developed to provide an equipment which will carry and safely sustain extended awning bars at distances from two to 2½ times the drop measurement. That is to say, an awning having the roller placed at 10 ft. 0 in. above pavement can be provided with an outrigger frame which will extend 7 ft. 0 in. or more forward and still be 6 ft. 6 ins. or 7 ft. 0 in. clear of the pavement. The minimum clearance above sidewalk is usually governed by local ordinances.

Kloes Flexible Folding Outriggers have been on the market for over twenty years. Some of the first installations are still in daily use.

We furnish these outriggers made of galvanized steel, brass, bronze, duraluminum or stainless steel.

For store fronts which are specially designed to have the awning outriggers concealed within recesses we furnish outriggers having ornamental members, which, when in raised position, appear as part of the window trim ornamentation, or where no ornamentation is desired the outrigger members can be designed to close the recess openings so as to appear to be part of the window framing.

The minimum clear width of recesses must not be less than 1½ in. for the usual store front awning.

Outriggers which are to be concealed are made to fit the conditions and type of construction called for in the architect's design.

Stock patterns of folding outriggers which are to be hung on the face of the store front trim are adaptable to a wide range of applications. Two outriggers can be relied upon to safely sustain awning bars up to 20 ft. 0 in. in length without sagging.

A Kloes Flexible Folding Outrigger installation includes furnishing and setting the outriggers and awning bars only. Awning roller mechanisms as described on the following page are adaptable to such installations.

KLOES BUILT-IN GEAR ROLLER AWNING MECHANISM

"Kloes" awning operating mechanisms have been specially developed for the control of store front and similar awnings which can be concealed when not extended. The awning canvas, which is usually provided under a separate contract, is rolled up on rollers which, with the necessary gearing mechanisms, are built into recesses provided by others in the construction of the window framing.

When "Kloes" concealed awnings are provided there is no canvas or unsightly mechanism visible from the street when the awnings are in raised position. This equipment is unexcelled for compactness and durability.

All gear cases are made of bronze, machined to be grease tight, and all gears are machine cut. Complete outfits are made up in our own shops to measurements and details as may be shown on architects' drawings or we will provide designs and shop drawings.

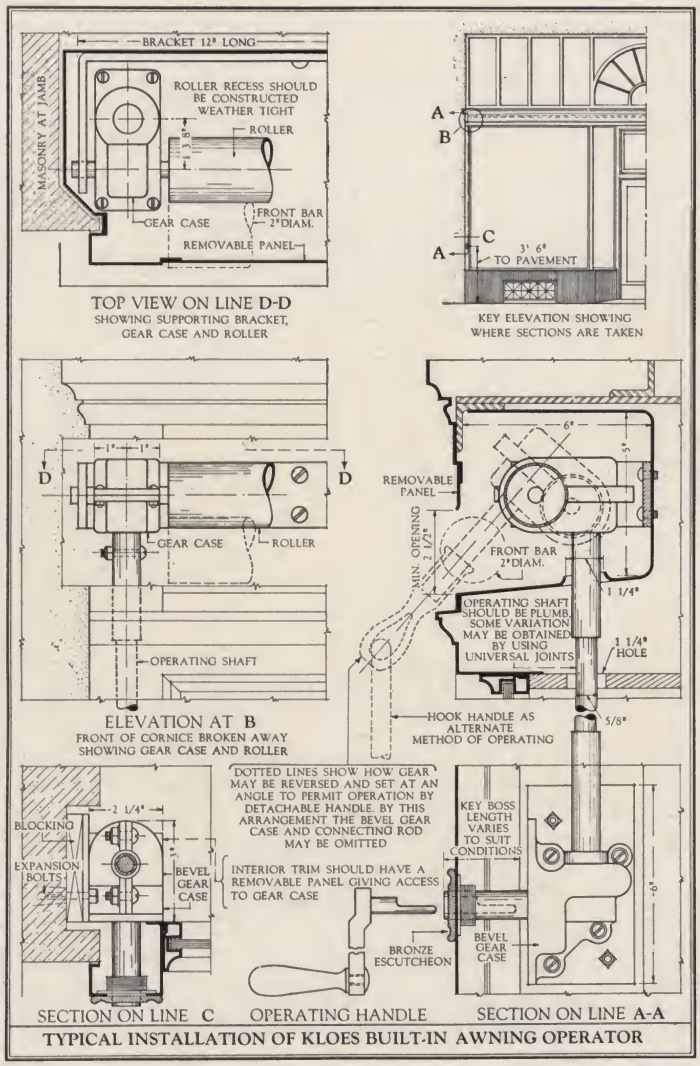
Our skilled erectors are available for installations at any point if desired, but any capable mechanic, carpenter or ironworker, can be relied upon to effect a satisfactory installation.

The gearing mechanisms which control operation of the awning roller can be driven by hand or by motor and the point of control can be on the street front or on the inside of the window.

The roller recess for an ordinary storefront up to 18 ft. 0 in. in width need not exceed 5 ins. height by 5 ins. depth; for wider store fronts 6x6 ins. is the minimum. All roller recesses should be weather-proof.

If framed of wood the back plate to which the bearings are to be attached should be 1¼ ins. thick. Recess boxes made of ⅛ in. thick steel plates are serviceable and economize space.

Awning rollers up to 20 ft. 0 in. in width are supported in end bearings only. For wider awnings intermediate supports are used to extend the length of roller to any required distance.



TYPICAL INSTALLATION OF KLOES BUILT-IN AWNING OPERATOR

A popular type of construction provides for operation of the awning roller by means of a long detachable handle. In this case the gear control member becomes a short shaft terminating in an inconspicuous eye end which projects diagonally through the face of the recess opening. This method is shown on the drawing as an alternate.

A more inconspicuous type of construction has a vertical connecting passage through one of the trim frames of the window or through a chase in the masonry pier into which a bevel gear crank case with a connecting rod reaching to the roller gear is placed. The crank case may be set up to be operated from the street front or from the inside of the store. The drawing shows this type of control.

Kloes Built-in Gear Roller Awning Mechanism may be used with any type awning outrigger whether of our own make or any other make.

A complete roller installation includes furnishing and setting the roller, the roller operating devices and all of the necessary hardware, bolts, etc., required for supporting the work in place. The awning box, window trim, etc., must be provided by others. The accompanying illustration shows the details of the roller and gives suggestions for construction of all enclosing and supporting work.

ESTABLISHED 1893

NEW YORK AWNING CO., INC.

401-403 West 36th Street, NEW YORK, N. Y.

MAIN OFFICE TELEPHONE: MEDALLION 3-1727 FACTORY TELEPHONE: MEDALLION 3-1770

Products

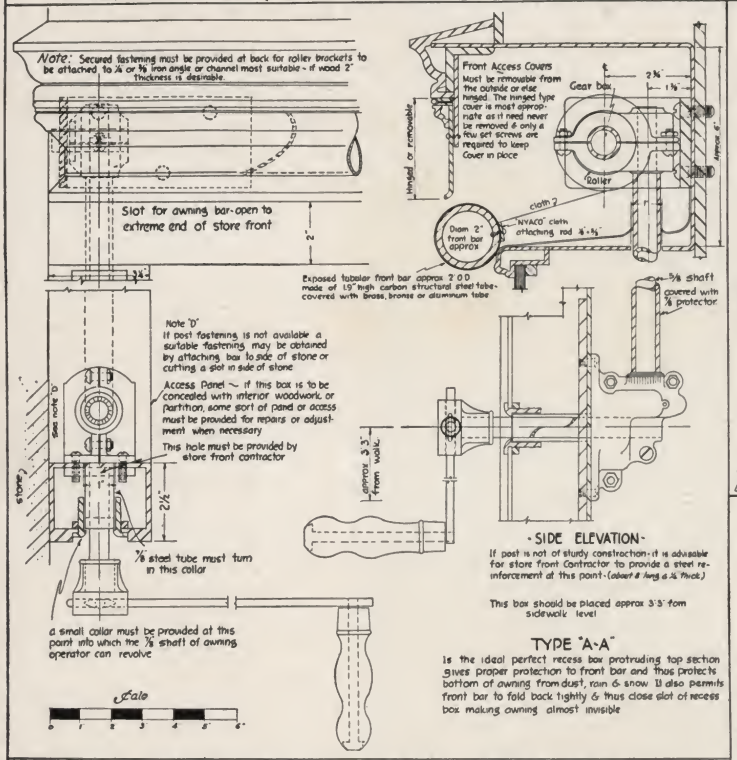
1. Awnings (For All Purposes).
2. Awning Mechanisms (Exposed Type).
3. Awning Mechanisms (Concealed Built-in Type).
4. Folding Arms (collapsible and disappearing).
5. Awning Rollers and Fixtures.
6. Roof and Terrace Awnings.
7. Sidewalk Entrance Canopies.
8. Removable Awnings.
9. Awning Cloth and Canvas Goods Products.

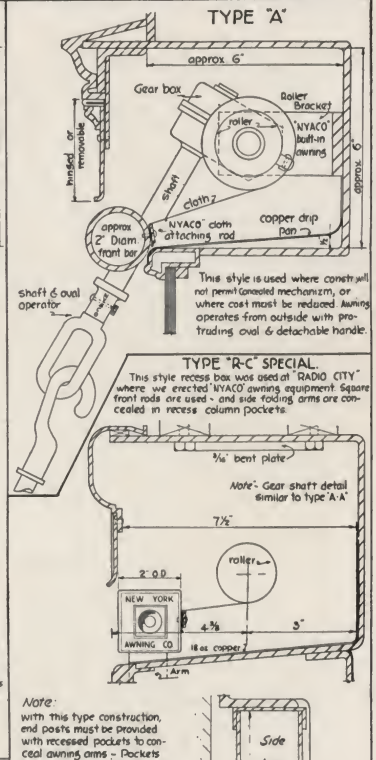
Specialties

1. Exclusive Designed Awning Cloth.
2. Fire-Retarding Fabrics.
3. Awning Lettering "Visible-at-Night."
4. "Nyaco" Vestibule Type Awnings.
5. Lateral Arm Construction.
6. "Nyaco" Improved Fixtures.
7. Unique and Unusual Installations.
8. Electrically Controlled Awnings.
9. "Nyaco" Fixture Equipment in all Metals.

DETAILS OF "NYACO" BUILT-IN CONCEALED RECESS AWNINGS

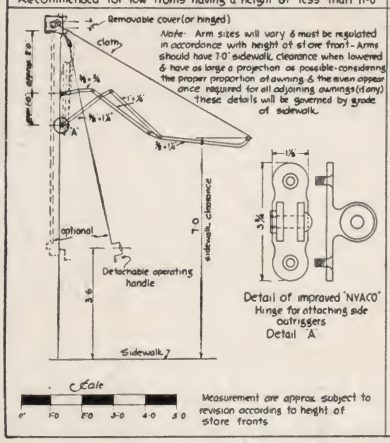
"TYPICAL LAYOUTS ONLY" (CAN EASILY BE CHANGED TO MEET EXISTING CONDITIONS OR PROPOSED PLAN OF STORE FRONT)



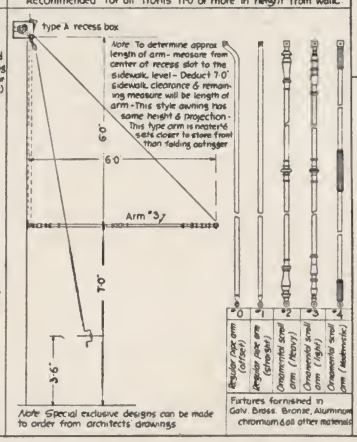


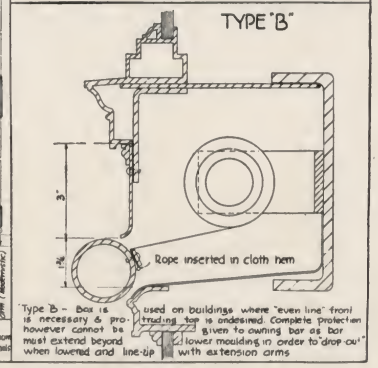
EXPOSED LOWER FIXTURES - CHOICE OF STYLE - DETAILED HERE

Collapsible Type of Folding Outrigger Arms
Recommended for low fronts having a height of less than 11'-0"

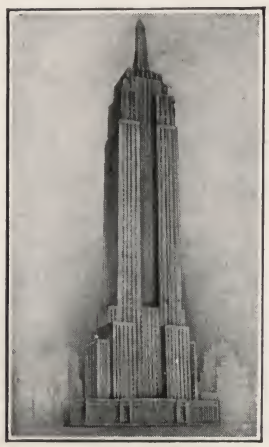


Vertical Type of Side Extension Arms
Recommended for all fronts 11'-0" or more in height from walk.





Full Written Specification on "NYACO Recess Awnings" will be furnished upon request



Empire State Building, Most Famous Building in the World, Has "Nyaco" Awnings

Shreve, Lamb & Harmon, Architects

Awning equipment on all store fronts specially made by New York Awning Co., Inc.

References

Architects

Cass Gilbert
Walker & Gillette
Shreve, Lamb & Harmon
Warren & Wetmore
Reinhard & Hofmeister
Trowbridge & Livingston
Sloan & Robertson
Ely Jacques Kahn
L. H. Friedland
Pruitt & Brown

Contractors

Starrett Brothers & Eken
Cauldwell Wingate Co.
George A. Fuller Company
John Lowry, Inc.
Marc Eidlitz & Son
Rheinstein Construction Co.
General Bronze Corp.
Wm. H. Jackson Company
Reliance Bronze & Steel Co.
Superb Bronze & Iron Co.

Residences

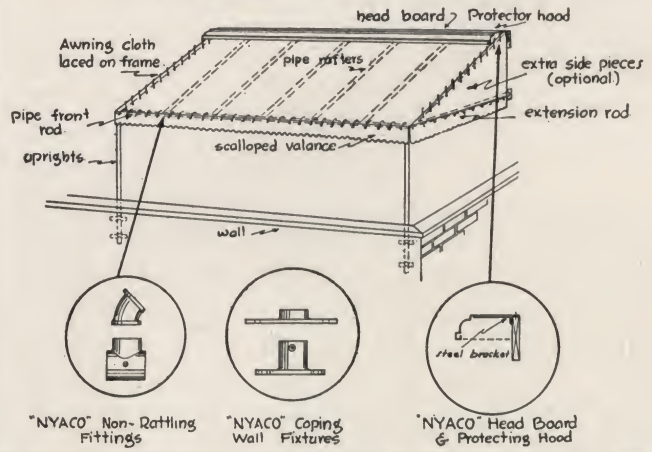
Walter P. Chrysler
S. Parker Gilbert
Kenneth D. Alexander
Robert E. Dowling
Arch. Selwyn
Cornelius F. Kelley
Wm. B. Leeds
Alfred P. Sloan, Jr.
Baron W. Von Zedtwitz
Charles A. Whelan

PROMINENT "NYACO" INSTALLATIONS

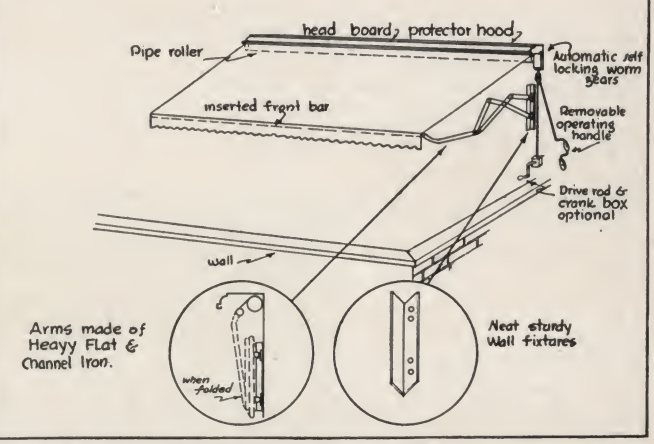
Empire State Building
Chrysler Building
N. Y. Central Building
Hotel Lincoln
Roxy Theatre
Trans-Lux Theatre
Nelson Tower
Rockefeller Centre
N. Y. Life Building
Chelsea Corners, New York
Gimbel Bros.
Lambs Club
U. S. Steel Building
Flatiron Building
Hotel New Yorker
Mt. Sinai Hospital
Beth Israel Hospital
Home for Hebrew Infants
Revillon Freres
Gunthers, Fifth Avenue
Stewart & Co. Building
Gulf Building, Pittsburgh
Newark National Building
Lyceum Building, Tarrytown
"Childs," Atlantic City
Kinney Building, Newark
Arnold Constable & Co.
Saks—5th Avenue

"NYACO" TERRACE OR ROOF AWNINGS

Stationary Frame ~ Lace-on Style



Folding Arm ~ Roller Style



"NYACO" Awnings for All Purposes

Let us assist you to design your awnings to harmonize with the architecture, color scheme and surroundings of your building or store front. Or, if you want something different to attract attention, ask us for suggestions. We welcome difficult and unusual construction



Specially Designed Fabric

Avoid the Fire Hazard

Let us assist you—consult us for details on fire resisting, leatherized cloth, flame-proof treated canvas; fireproof asbestos fabrics.

Gear Roller Metal Awnings

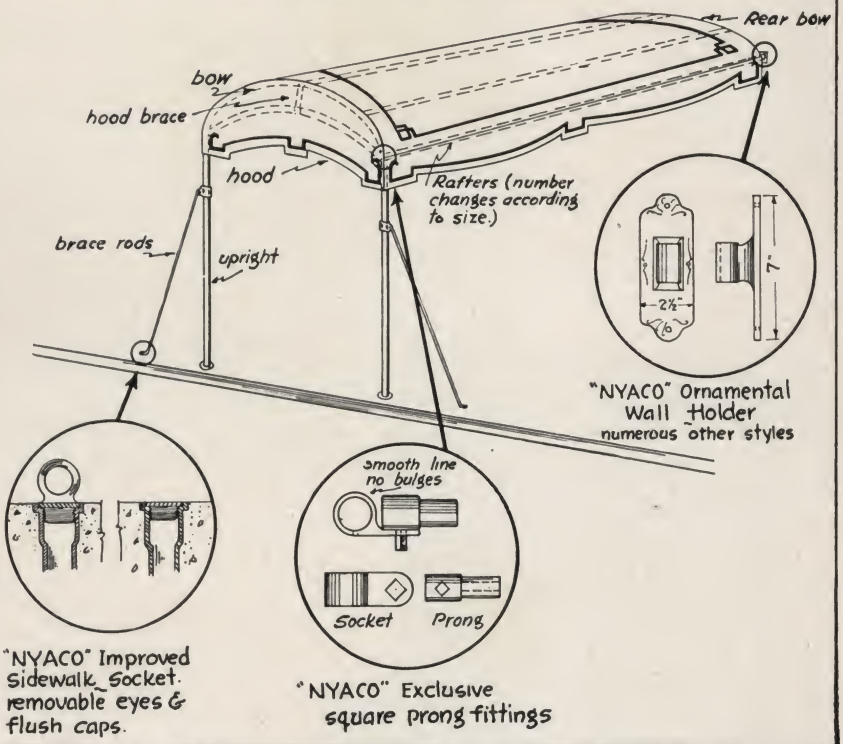
(With ball-bearing equipment) operate the same as cloth awnings.

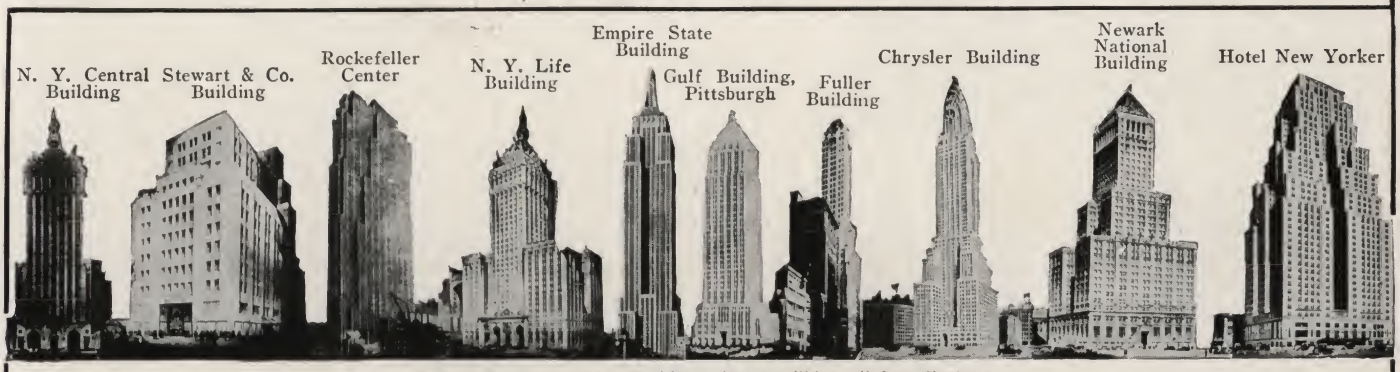
Collapsible Metal Window Awnings

For residences, hotels, office windows, etc.

"NYACO" SIDEWALK CANOPIES

"ENTIRELY REMOVABLE"





A Few Representative Buildings Having "Nyaco" Installations

Co-operative Service

Full co-operation to architects, builders, decorators and owners. Consult us for advice or suggestions. Complete details, specifications, samples and drawings gladly furnished. *Send for "NYACO" Catalogue.*

ATHEY COMPANY

Perennial Window Shades and Disappearing Skylight Shades

6035-6045 West 65th Street, CHICAGO, ILL.

BRANCHES AND DISTRIBUTORS

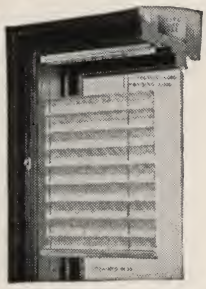
BOSTON, H. E. Holbrook Company, 89 Federal Street
BUFFALO, Howard T. Cary, 293 Voorhees Avenue
CHICAGO, Wilson & Scott, 1923 Calumet Avenue
CLEVELAND, Consolidated Screen & Weatherstrip Company, Rockefeller Building
DAYTON, OHIO, Glawe Mfg. Co., 515 E. Herman Avenue
DETROIT, LeSage & Company, 1720 12th Street
HARTFORD, Hartford Wire Works, 90 Allyn Street
HONOLULU, T. H., Jack Drew, Box 3135
LOUISVILLE, V. C. Glass Carpet Co., 1004 W. Main Street
MEMPHIS, Chears Floor & Screen Co 884 Adams Avenue
MILWAUKEE, Willer Screen & Weather Strip Co., 1459 No. 40th Street
NEW YORK, Franklin H. Keese, 7 E. 42nd Street
ST. LOUIS, John C. Wasson, 1527 Chemical Building
ST. PAUL, Metal Weatherstrip Co., 910 Builders Exchange
SAN DIEGO, Consolidated Building Specialties Co., 1760 Kettner Boulevard
TORONTO, Cresswell Pomeroy, Ltd., 2 Grosvenor Street

CANADIAN OFFICE AND FACTORY: Cresswell Pomeroy, Ltd., 3989 Ambroise Street, MONTREAL

For our page on Weatherstrips, see Manufacturers' Index

ATHEY PERENNIAL WINDOW SHADES

The Athey Accordion Pleated Window Shade has been on the market for over 15 years, the manufacture of same having been taken over by this company in 1920. Since then many important improvements have been made so that the present shade is a perfected article in both materials and mechanism.

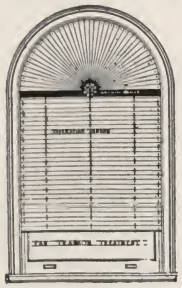


The cloth used is a herringbone weave coutil cloth, manufactured especially for Athey Shades, the thread count is 124x76 or 200 threads to the square inch, weight 1.98 lbs. to the yard. It is calendered to a smooth, dirt resisting finish; the lasting quality of Athey Shades is obtained from the cloth itself and not from artificial filling materials.

Athey Shades are furnished in the following colors: tan ecru, orange ecru, light green, dark green, taupe, black, and white, all colors being guaranteed against fading.

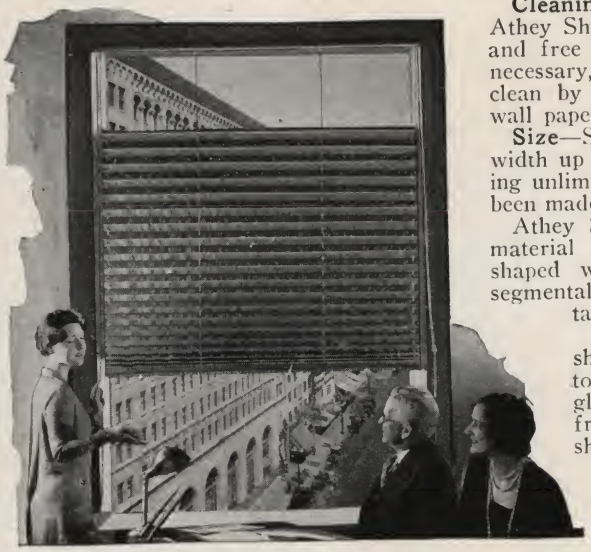
The cloth is pleated in 1⅝ in. folds, stitched along the edges of each fold thereby assuring the proper collapsing of the pleats when the shade is operated. When collapsed, very little space is occupied by the shade, about 3% of the total height.

Athey Shades are attractive, enduring and practical and are the intelligent solution of light control as they can be lowered from the top as well as raised from the bottom, thereby permitting the shading of any part of the window as desired.



Construction and Operation—The mechanism consists of a steel cord case 1⅛x$\frac{13}{16}$ in. at the head, painted in duco to match the color of the cloth. In this cord case are the brass rollers over which the cords operate and the brass adjusting sleeves for tightening the guide wires. The shade is gravity operated, weight bars being used at the top and bottom of the shade. These bars are invisible, being covered by the hem of the shade. The cord used is a hollow braided cord, all attachments made to the bars by the use of screws in the ends of the cord, no knots being used in the assembly. Guide wires, sill plates and cordhooks are all of polished brass.

Special finishes for residence work, lacquered in gold, silver, copper or any metallic colors, also chintz faced shades of cloth as may be selected by the purchaser.



Cleaning—The constant operation of Athey Shades tends to keep them clean and free from dirt. When cleaning is necessary, brush off surface, dust and clean by same method as in cleaning wall paper.

Size—Shades can be made in any width up to 17 ft. wide, the height being unlimited, in many instances having been made as high as 20 ft.

Athey Sunburst Shades of the same material can be made for irregular shaped window heads and transoms; segmental, elliptical, gothic or rectangular.

Natural Ventilator—The shade acts as a natural ventilator when the sun is on the glass. By lowering the window from the top and raising the shade from the bottom, the intermediate air becomes superheated causing an upward current which ventilates the room.





A Few Buildings Athey Shaded

ATHEY DISAPPEARING SKYLIGHT SHADES

The Athey Skylight Shade is used to shade skylight openings, greenhouses, natatoriums or any other type of ceiling opening where a shade might be required. With the variety of *guaranteed non-fading* colors available, it is possible to secure this shade in a light color fabric to eliminate glare and diffuse light or in an opaque fabric for purposes of darkening auditoriums or laboratories for projection work.

All materials used in this type of shade are the same high quality as those used in the regular Athey shade shown on preceding page. The Athey Skylight shade, however, operates in a horizontal position and instead of the cords and wires running through the cloth, the pleats are suspended below the taut brass wires by means of bronze clips and the cords operate above the shade. When the shade is extended across the opening, all cords and wires are invisible from below. When the shade is collapsed it occupies about 3% of the length of the well affording practically full use of light coming through skylight opening on dark days.



Offices of Bowman Dairy Co., Chicago, Ill.

The cost of skylight shades varies with the installation conditions. The most simple and economical installation is to have the shade operated from a point directly below the well—the operating cord loop dropping down from one corner of the well to about 6 ft. from the floor where it may either hang free or be fastened to any convenient wall or pillar.

When the operating cords below the well are objectionable, they can be diverted from the well to the nearest wall or column on a direct line, providing the distance is not more than 10 ft. When necessary to operate the shade from a greater distance, cables are used and operation effected by the use of a geared winch which naturally is more expensive to install.

In making preparations for Athey Skylight Shades, when laying out the building plans, we ask that architects consider where the shade is to be located and to keep this space clear of radiators, piping, etc. If piping for skylight radiation or sprinkling systems is necessary, locate it as close to the wall as possible and preferably at the narrow end of the well.

All skylight shades are made to the narrowest width of the well and operate the long way. Where operating cords are to hang free, we suggest the shade be located in the lower 6 ins. of the well. Where cords are to be diverted to any great distance, we suggest the shade be located so that cords can run in a direct line to a point where they are to be diverted downward.

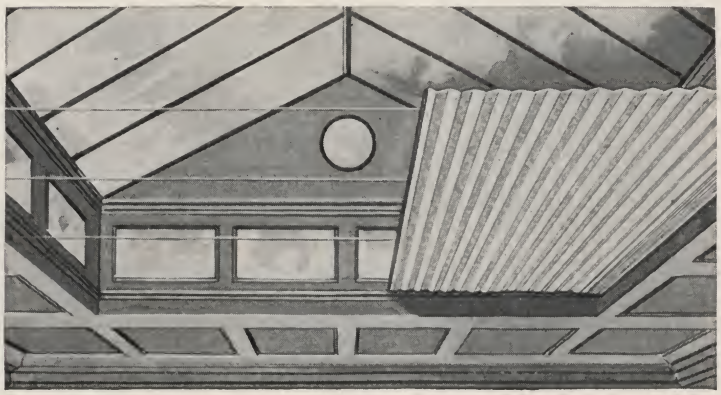
If skylight wells are of concrete we suggest the insertion of 4 in. wood grounds at each end to provide anchorage for the shade as this will simplify installation considerably.

In shading greenhouses, natatoriums or other glass roofed buildings, the same type of shade is used; however, if the pitch of the roof is as great as 45 degrees, the installation can be simplified as the shades will lower of their own weight, thus dispensing with one set of draw cords.

Owing to the excessive number of cords that would be necessary to operate the shade from both ends of the well towards the middle, the shade operates from one end only, the other end anchored to the well. Send your plans direct to Chicago for estimate or confer with our nearest representative.



The E. H. Allen Private Natatorium, Chicago



Skylight Shade

ANDEL & COMPANY

AFFILIATED WITH KERNER INCINERATOR COMPANY

Manufacturers of Andelco Lightproof Curtains

4630-4636 North Lamon Avenue, CHICAGO, ILL.

BRANCH OFFICES AND AGENCIES IN 150 CITIES, LISTED IN LOCAL TELEPHONE DIRECTORIES UNDER KERNER INCINERATOR COMPANY

ANDELCO LIGHTPROOF CURTAIN EQUIPMENT

Types

Electrically Operated Types.
Manually Operated, Crank Gear Control Type.
Spring Roller Type—operated by chain or pull cord.

Construction

Andelco Lightproof Curtains are made of heavy doubly treated and filled special Andelette leather and steel. We manufacture both electrically and manually operated equipment. All types are automatic limiting and foolproof. Andelco best grade equipment is fully self-lubricating.

Guarantee

All Andelco Lightproof Equipment is guaranteed unreservedly. Any necessary replacement, repairs or adjustments to make Andelco installations wholly and fully satisfactory will be made in a period of five years after completion of installation free of any expense to the buyer.

Service

Call our representative, or send pertinent sketches, plans, elevations and sections and we will furnish details illustrating the proper equipment for the particular job, prepare specifications and submit an estimate or definite proposal, if desired.

This service is without charge or obligation.

Andelco Bulletin, A.I.A. File No. 35-D-55, will be supplied, for architects' files, from our Chicago office, or any office listed in local telephone directories under "Kerner Incinerator Company."

Andelco Curtain Manual of comprehensive details and data is available (loaned) to architects or engineers to assist them in the detailing of this equipment where it is built into the building construction.

For Use Wherever Absolute Darkness During Daylight Hours Is Desired

The Andelco Lightproof Curtain is the only equipment *scientifically designed* for the absolute exclusion of light and for *photographically safe rooms.* Methods previously used were largely improvised and of a makeshift nature.

Specify for use in:
School Auditoriums
Lecture and Classrooms
Laboratories
X-Ray and Dark Rooms
Operating Rooms
Autopsy Amphitheatres
Clinics
and wherever absolute darkness during daylight hours is desired.



Lecture Room Auditorium, University of Chicago, Eckhart Hall
CHARLES Z. KLAUDER, Architect
"Built-in" type installation, electrically operated

Andelco Curtain Equipment Used by Leading Institutions

Over 2100 installations in the United States.

A few typical purchasers:
University of Chicago, Chicago, Ill.
University of Illinois, Chicago, Ill.
Iowa University, Iowa City, Ia.
University of Cincinnati, Cincinnati, Ohio
National Geographic Society, Washington, D. C.
University of Texas, Austin, Tex.
Redcliffe College, Cambridge, Mass.
Purdue University, Lafayette, Ind.



Typical Lecture Room Auditorium, University of Chicago, Social Science Building
C. HODGDON & SON, Architects
"Built-in" type installation, electrically operated



Typical School Auditorium, Indiana University, School of Pathology
R. FROST DAGGETT, Architect
"After-completion" type of installation, electrically operated

JOSEPH BANCROFT & SONS CO.

Manufacturers of Superior Quality Window Shade Cloths

WILMINGTON, DEL.

In these goods the art of the manufacturer has, we believe, been brought to a point of perfection, far beyond anything heretofore attained.

They are made by patented processes, and to secure uniformity of fabrics, color and finish, the manufacturers maintain their own mills for the spinning and weaving of the basic cloth, their own laboratories for the making of materials used for color, and their own plants for dyeing and finishing.

The complete line of colors of both brands is covered by an absolute guarantee of the manufacturers that they *will not fade by exposure to the sun.*

Attention is called and comparison invited to the durability of both these products; also to the smooth and *lustrous beetled finish* which enhances the brilliant richness of the colors.

SUN-FAST AND VENETIAN STRIPE HOLLANDS FOR WINDOW SHADES

Sun-Fast and Venetian Stripe Hollands will not stretch, crack, dry out, become tender and brittle when exposed to the sun and air.

SUN-FAST TRADE MARK REG. U.S. PAT. OFF.

Sun-Fast and Venetian Stripe Hollands are *weatherproof, waterproof, unshrinkable, insectproof, and cleanable* with soap and cold or warm water, wet cloth or sponge.

The day of scrubbing wooden floors, etc., with all the incidental disagreeable conditions and labor, are past. You now clean Sun-Fast and Venetian Stripe window shades just like tile in a bathroom.

Simply wipe the grime off. Scrubbing is unnecessary.

ROCK FAST SHADE CLOTHS, PLAIN AND STRIPED, FOR WINDOW SHADES

Rock-Fast Shade Cloths are not only *full pyroxylin impregnated* but also have the advantage of a highly *lustrous and permanent beetled finish.*

(Pyroxylin Impregnated)

ROCK-FAST

Rock-Fast is fast to light.

Rock-Fast is fast to sun and weather.

Rock-Fast is fast to everything that a window shade should encounter.

OTHER SHADE CLOTHS

Claysmith Company, Inc., Manufacturers

Albert Hollands

Both plain and striped. Unsurpassed among medium priced fabrics for window shades, on account of greater durability. Are true to color and of superior finish.



London Hollands

Both plain and striped. Unexcelled among lower priced fabrics for window shades, for the reason that they are stronger, are true to color and of superior finish.

Claysmith Striped Hollands

An outstanding cloth for appearance and value.

Smith's Oil Opaques

The superiority of finish, color, flexibility and durability, make them particularly desirable for window shades.

DU PONT TONTINE WASHABLE SHADE CLOTH

Made by
E. I. DU PONT DE NEMOURS & CO., INC.
NEWBURGH, N. Y.

DU PONT TONTINE WINDOW SHADES ARE WASHABLE!

In fact, Tontine Shades can be scrubbed clean whenever soiled. Think what this saves in replacement costs. That's the reason architects everywhere are specifying Tontine Shades. They are easy to keep clean too. A good stiff brush, either hot or cold water, plenty of soap suds, and they come out restored to their original fresh beauty —every trace of dust, dirt and finger marks removed. Many of the country's leading buildings have their Tontine Shades washed twice a year regularly.



DU PONT
REG. U.S. PAT. OFF.

TONTINE
REG. U.S. PAT. OFF.

THE *WASHABLE*
WINDOW SHADE





The Washing Test

Unretouched photomicrograph showing du Pont Tontine after being scrubbed with a brush, soap and hot water. Note that the surface is unharmed by this rigorous washing test

A high grade non-pyroxylin shade cloth washed exactly the same way as the Tontine cloth (unretouched photomicrograph). Filler has dropped out, exposing the basic fabric

Durable, Too

This shade cloth is impregnated with pyroxylin—which is the same basic material that goes into the Duco finish on a car. This pyroxylin makes Tontine Shades scrubbable. It makes them durable. That's the reason they won't fray, or pinhole or wear thin. They are the ideal shades for hotels, hospitals, schools and other buildings where rough handling, exposure and lack of care are in the natural order of things.

Waterproof

Nothing can make Tontine Shades go limp, neither rain nor dampness, nor fog. They will stay crisp, regardless—thanks to their pyroxylin base.

Will Not Fade

Tontine Shades are made with sun-tested pigments. Sunlight doesn't fade them. Washing doesn't fade them. Exposure doesn't fade them. They retain their color through years of service.

How Tontine Is Made

Tontine is made by an entirely new process, developed by du Pont chemists. The basic fabric is special cotton cloth, woven to our strict specifications as to weight, count and tensile strength.

This material is thoroughly impregnated with imperishable pyroxylin, forced through and through the fabric—an ideal vehicle for the sun-tested pigments used for coloring. Tontine's surface is beautiful, lasting, very tough and entirely waterproof.

Colors and Widths of Tontine

Du Pont Tontine shade cloth is offered in 24 solid colors and 6 duotone combinations (widths 36 to 72 in.); in attractive corded designs (widths 32 to 63 in.); and in figured patterns (widths 36 to 54 in.). All Tontine shade cloth, no matter what design, pattern or color specified, is waterproof, washable, color fast and durable.

Proper Shade Cloth Specifications

All shade cloth shall be du Pont "Tontine," waterproof and washable pyroxylin material, of color to be selected by the owners. Each shade to be mounted on the Tontine guaranteed shade roller. Each bidder must submit a sample of the material he proposes to furnish.

Test Tontine Shade Cloth Yourself

We will gladly send a large sample piece of Tontine to test out in your office. Soil this piece, then scrub it clean with soap, water and a brush. Immerse it in water for days—it is thoroughly waterproof. Note that it does not crack, "pinhole," fray or fade.

Note the effect of a washing test on Tontine in comparison with an ordinary filled fabric. The photomicrographs above will give you an idea of what happens.

Let Us Send You—

Sample books showing complete color range.
Testing Swatches.
Information concerning installations.
Names of nearest dealers.

Just write to E. I. DU PONT DE NEMOURS & CO., INC., Dept. S. C., Newburgh, New York.

The Washable Fabric Wall Covering

DU PONT
REG. U.S. PAT. OFF.

MURALART

Du Pont Muralart is a new washable fabric wall covering which has gained favor with many leading architects, decorators and large building owners throughout the country. It has these outstanding advantages:

Its surface is of the same basic material as that used in du Pont Duco—hence its beauty and finish are lasting.

It is washable and waterproof—repeated washings will not harm it.

It can also be washed down without injury with a 5 per cent solution of carbolic acid, Dakin's solution, Lysol, or any other well-known disinfectant.

It is extremely resistant to scuffing and rubbing and is easily applied by an interior craftsman—and with no muss or inconvenience.

Because of its strong fabric base it bridges old cracks and acts as a surface support.

Du Pont Muralart is obtainable in a wide variety of interesting textures and colors.

Upon request we shall be pleased to forward to interested architects sample book containing twenty-four colors.

E. I. DU PONT DE NEMOURS & CO., INC., Dept. S. C., Newburgh, New York.

THE HIGGIN MANUFACTURING CO.

Light Tight Shades for All Dark Room Requirements

GENERAL OFFICES AND FACTORY
NEWPORT, KY.

CANADIAN FACTORY—TORONTO, ONT.

Sales Agencies in More Than Fifty of the Larger Cities Throughout the Country

For Metal Access Panels, Wood and All-metal Frame Door and Window Screens, see our pages in Manufacturers' Index

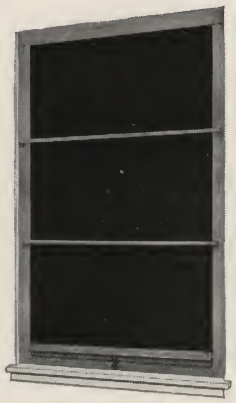
HIGGIN
LIGHT·TIGHT
SHADES

Light Tight Shades

Higgin "Light Tight" Shades have been especially designed and built to meet rigid and exacting conditions. Any room can now be a dark room in an instant, just pull down the shade. Full light and air can be had just as readily, release the convenient latch and roll the "Light Tight" Shade up just like a roller shade. There is no longer need for expensive inside dark rooms that are damp and poorly ventilated. Higgin "Light Tight" Shades provide the necessary darkness during working hours . . . . after hours they may be rolled up for entrance of refreshing light and air.

The equipment is compact and neat of appearance and can be installed in practically every type of window construction. They conserve space and operate smoothly and evenly. Best of all, they really shut out all light.

The equipment consists of an assembly box or head housing, 2 9/16 or 3 in. square depending on height of opening. Guides are 2½ in. deep by 1/16 in. thick and are equipped with fastening flanges. Operating bar is 2⅛ in. deep and has a continuous tongue to engage a light lock member at the sill. At the center of operating bar is a spring latch equipped with ring for pole or cord operation.



Shade Closed—Braces Both Sides in Position

To prevent cloth being blown from guides should the window be left open, disappearing type braces are provided, usually two to the outside and two to the inside. When shade is closed the braces rest on rubber tipped stops, when shade is raised the operating bar carries them to the head of the opening out of the way.

Materials are of the best. Metal is electro galvanized steel with brown lacquer finish, a standard color. Special finishes may be had. All parts are particularly designed and constructed for the shade. The lightproof cloth is Pantasote, a special fabric built up of two layers of cloth thoroughly united and coated. Pantasote is not only lightproof but non-inflammable, crackproof and fadeproof. This material is strong and reliable and remains soft and pliable under all weather conditions.

The cloth or any part of the equipment may be removed and replaced without damage to other members.

Where Higgin "Light Tight" Shade equipment contacts sides, top and sill of the opening, mastic is inserted, thus preventing entrance of light around the shades.

Scale details in printed form are available—write for them. If you have an unusual problem our advisory department will be glad to work with you.

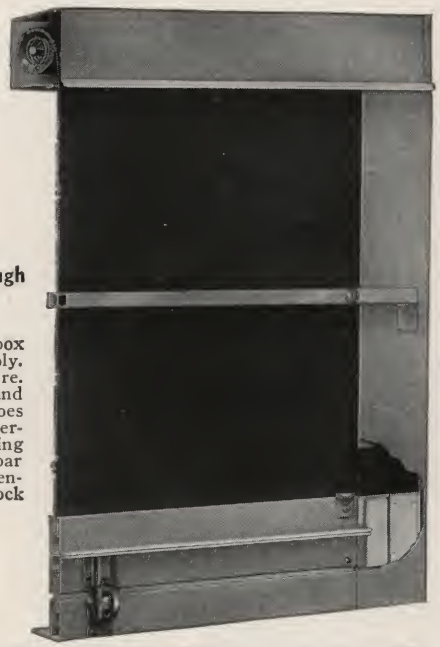


Shade Open—Braces Are Carried to Head of Opening

The above descriptions cover hand-operated shades. Motor-driven types are manufactured on the same general lines and complete information may be had for the asking.

Patents

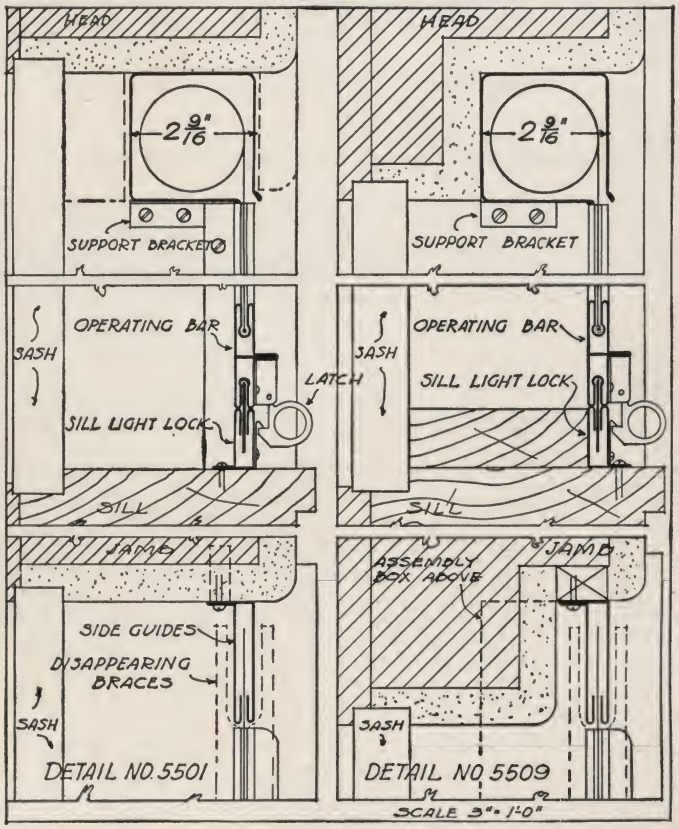
Higgin Products are covered by patents which fully protect important features.



Right:

A Sectional View Through Higgin "Light Tight" Shade

At head is assembly box containing roller assembly. Spring is of music wire. Side guides are deep and designed so extending shoes from operating bar interlock. Note disappearing type braces. Operating bar is rigid and has tongue engaging with sill light lock member



Two Suggested Installations

No. 5501 may be used for openings already constructed. No. 5509 has opening especially prepared. Other details in printed form on request

ESTABLISHED 1860

STEWART HARTSHORN COMPANY

SUBSIDIARIES

OSWEGO SHADE CLOTH COMPANY
OSWEGO, N. Y.

JOANNA MILLS
GOLDVILLE, S. C.

Manufacturers of Hartshorn Window Shade Rollers and Shade Cloths

TELEPHONE
CAledonia 5-9620

250 Fifth Avenue
NEW YORK, N. Y.

BRANCH OFFICES

CHICAGO, ILL., 29 East Madison Street

TORONTO, ONT., CANADA, 54 River Street

LONDON, ENGLAND, Bush House, Aldwych, W. C. 2

Products

HARTSHORN WINDOW SHADE ROLLERS; HARTSHORN WINDOW SHADE CLOTHS.

HARTSHORN AWNING ROLLERS.

Also special grades of High Carbon and Alloy Steel Wires; Aircraft Tie Rods.

Hartshorn Automatic Spring Shade Rollers

Hartshorn Wood Rollers—Have barrels of well seasoned, kiln dried white pine; finely tempered steel wire springs, produced in Hartshorn's own wire mill; moving parts, which consist of brass pawls and rivets mounted on a copper plated steel cup that revolves on a brass ferrule, will not rust or stick and insure smooth, silent action; aluminum shells, which will not rust or tarnish, but remain always bright and new, enclose the mechanism at one end of the roller. Aluminum pin ends protect the solid end. All of these new improved mechanical parts make the Hartshorn Roller silent, smooth running and long lived. Hartshorn Rollers are guaranteed for the life of the building.

Hartshorn Wood Rollers are made in four diameters:

⅝ in. up to 43 in. in length	1⅛ in. up to 49 in. in length
1 in. up to 43 in. in length	1¼ in. up to 73 in. in length





Made in two styles: Regular full round for use with mounting machines, tacks or staples; Improved Grooved for use with shade holders.

Hartshorn Metal Rollers—Made of high grade hammered open hearth steel, heavily tin plated. Powerful springs made of finely tempered steel wire produced in Hartshorn's own wire mill; brass pawls and copper plated stamped steel parts make this roller smooth running and rustproof. Extension plugs in the ends permit the lengthening of these rollers in proportion with the diameter of the roller. Hartshorn Metal Rollers are guaranteed for the life of the building. They are made in two styles: the new groove in which fasteners are slipped over the end of the shade, pressed into the groove and turned so as to secure the cloth. The old groove in which the cloth is folded over short lengths of wire, slid into the groove from the plug end and held securely in place by these short wires.

Hartshorn Metal Rollers are made in the following diameters:

1 in. up to 4 ft. in length	2¼ in. up to 12 ft. in length
1¼ in. up to 5 ft. in length	3 in. up to 15 ft. in length
1½ in. up to 6 ft. in length	4 in. up to 18 ft. in length
1¾ in. up to 9 ft. in length	5 in. up to 25 ft. in length

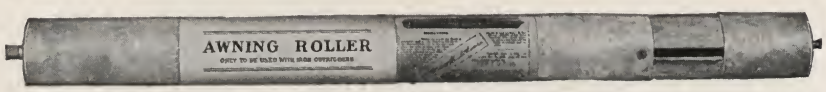




Hartshorn Awning Rollers—Hartshorn All-metal Galvanized Spring Awning Rollers are made with patented all-metal extension; are rustproof and easily adjustable. Can be used for several sets of awnings. Made in 1½, 1¾, 2¼, 3, 4 and 5-in. diameters. (The 3, 4 and 5-in. diameters are made only with the regular wood plug extension.)

All exposed parts are electro-galvanized, making them completely rustproof. The powerful springs of finely tempered steel wire, produced in Hartshorn's own wire mill, can be adjusted to lift the heaviest awning. The awning canvas can be sewed to a strip of strong Holland shade cloth supplied with each roller. The Holland strip is easily inserted in the roller groove and held securely in place by a full length wire also supplied with each roller.

Also Hartshorn Steel Awning Rollers heavily plated with tin and painted with a waterproof paint. Made in all diameters listed above with regular wood plug extension.



Hartshorn Automobile Rollers—Made of high grade hammered open hearth steel plated with tin in ¾-in. diameter size with 1-in. nickelplated flanges on the ends. Noiseless and rattleproof. Obtainable in stock sizes for all standard make cars.

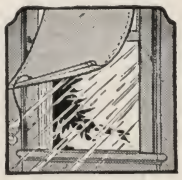
Hartshorn Car Rollers—For use in railway cars, street cars, etc., specially made with powerful springs of finely tempered wire.

Special Rollers—We are always glad to take up problems of roller construction for special devices. Having our own wire mill we are best able to furnish springs that can be adapted for any work required.

Hartshorn Shade Cloths

The muslin used in all Hartshorn Shade Cloths is made from high grade, long staple cotton, produced in Hartshorn's own mills at Goldville, S. C. These mills are equipped with the very latest types of textile machinery and are devoted exclusively to the production of shade muslin. By spinning and weaving its own shade cloth Hartshorn obtains a specialized product which has many advantages over that ordinarily used.

Hartshorn Joanna Cloth—A waterproofed beetled shade cloth with a beautiful satin, moire finish. This cloth contains no filling and is made by a manufacturing process whereby a special protective preparation literally is hammered into select cotton fabric. Exposure to rain or weather will not affect it. It is sunproof, dirt-resisting and sanitary, and is easily cleaned. Joanna Cloth will not curl, crack, stretch or bag and will hang smooth and straight at the window indefinitely. It is manufactured in both solid and duplex colors. The light colors are translucent, but will not show silhouettes. They diffuse the light of the sun and brighten up the interior of the house.



Rainproof

Hartshorn Oswego Tinted Cambric—This fabric contains absolutely no filling and is tinted by hand with pure linseed oil colors which are sunproof. It is made from the best grade of cambric shade muslin and because of its oil painted finish it is not affected by moisture or atmospheric conditions. It is a durable shade cloth that will not curl, crack or bag. Oswego Tinted Cambric is very popular in duplex combinations since, by using a shade with contrasting colors on the two sides, it is possible to match both exterior and interior coloring without the use of two separate shades. The light colors are translucent, but will not show silhouettes. They diffuse the light of the sun and brighten up the interior of the house.

Hartshorn Oswego Shadowless Triplex—Is a specially treated cloth designed particularly for use in installations where the shades must keep out all light, such as in dark rooms, laboratories, X-ray clinics, moving picture auditoriums, etc. May be had in any color so as to match the shades in other parts of the building.

Hartshorn Oswego Opaque Cambric—An unfilled hand-made shade cloth, made exactly like Oswego Tinted Cambric with the exception that a heavier paint is used on the surface, making it less translucent. Opaque Cambric is particularly suitable for use in hotels or other public buildings where shades are apt to be subjected to rough usage.

Hartshorn Chouaguen Hand-made Opaque—A hand painted shade cloth of fine smooth texture, less translucent than Oswego Tinted Cambric.

Hartshorn Satin Finish Shade Cloth—Sunproof, waterproofed and cleanable.

Hartshorn Aluminum Coated Moving Picture Screen Cloth—Very popular wherever home movies are in use. Reasonable in price, easily installed and gives a good clear projection.

Samples

Write for sample books showing complete color line.

Window Shade Specifications

General—These specifications cover the manufacture and correct installation of window shades (including labor, material, and all appliances and accessories) at the given address, so as to provide a complete installation ready for use. Accurate measurements are to be taken at the building and all conditions noted by the contractor. Shades to be made in a thoroughly workmanlike manner, cut square and true and mounted on rollers in the same manner. The materials used in the manufacture of these shades must be commercially perfect and of first quality. All shades to be free from dirt, finger marks, etc., and subject to final acceptance by the owner.

Charge of Work—Owners shall have the general supervision and direction of work. They shall pass upon materials, workmanship and installation, and may reject such as in their judgment is not in accordance with contract or specification.

Scope of Work—(State here whether shades are to be double hung—that is, two shades mounted in the center of sash so that the top shade rolls down and the lower shade rolls up (school installation)—or whether the shades are to be mounted at top of the sash to roll down, or any other type of installation that may be required.) State also windows that will not require shades or any other information bearing on the installation and requirements pertaining to the job.

Cloth—Shades to be made of Hartshorn Joanna Cloth as manufactured by the STEWART HARTSHORN COMPANY. This cloth to have a smooth, moire finish and to be sunproof and waterproofed and to be free from filling. (Alternate prices on Hartshorn Oswego Tinted Cambric, or if lightproof window shades are desired Hartshorn Shadowless Triplex, as manufactured by the STEWART HARTSHORN COMPANY. This cloth to be hand-made, free from filling, sunproof and waterproofed.)

Length—Cloth for all shades to be *finished* 9 in. longer than actual window openings and of correct width.

(Optional)—Shades that are to be installed on face of casings to have the cloth cut 4 in. wider than width of window opening, so as to allow a 2-in. lap on each side.

Color—Color to be specified by architect. (State whether solid or duplex color is required.)

Rollers—All shades to be mounted on genuine Hartshorn [wood] [metal] Rollers. Metal rollers to be made of the best grade open hearth steel heavily plated with tin and fitted with a groove for attaching shade fabric. Rollers to be of a diameter guaranteed to carry the shade. (State diameter required.)

Slats—⅞, 1¼, 1½, 1¾, 2 or 2½-in. white pine slats to be placed in hems of all shades. Slats to be cut ¼ in. less than width of cloth.

Eyelets—Shades to be equipped with stainless metal eyelets fastened through the center of slat for attaching of shade cord or shade pull.

Cord—All shades to be equipped with No. 2, 3½ or 4 braided cord (ring pull) to match color of shade and to be attached to slat and fastened to the window jamb with suitable length of cord to allow for the operation of the shades.

Hems—Shades shall be equipped with [side hems] [plain side] [reinforced pocket]. Slat hems for all shades shall be securely sewed, back-stitched and tied.

Brackets—If attached to solid metal sash or frame, screw holes to be drilled and tapped and brackets installed with machine screws. If hollow metal sash and frame, screw hole to be drilled, brackets installed with Hartshorn's Expansible Screw Grips or a case hardened self-threading screw. If attached to wood sash or frame, brackets to be installed with regular wood screws. Brackets to be installed in such a manner so as to assure true alignment when rollers are placed therein. (On installations where stop pulleys are required the same method of attaching them will be used as stated in the installation of brackets.)

Delivery—All shades shall be installed complete by .....or any other date agreed upon in writing by the owner.

Shades for Casement Windows and Other Difficult Installations

No substitute has ever been found which can control the lighting of a room through windows any better than a window shade. Our *Architectural Service Department* is familiar with every type of window shade installation and can solve your most difficult problem. Please do not hesitate to call upon them for information.

Address your letter to the Architectural Service Department, STEWART HARTSHORN COMPANY, 250 Fifth Avenue, New York, N. Y., or call CAledonia 5-9620.

INTERSTATE WINDOW SHADE PRODUCTS

Manufactured by

Interstate Shade Cloth Co.
812-820 Jefferson Street
HOBOKEN, N. J.
TELEPHONES, Rector 2-3840; Hoboken 3-1848, 3-1849

The Lapsley-Interstate Shade Cloth Co.
Light and Lombard Streets
BALTIMORE, MD.
TELEPHONE, Plaza 3290

Products

INTERSTATE WINDOW SHADE CLOTHS and ROLLERS are sold under trade-marked brands—Inter-twill, Radiant, Sunlite, Paragon, No-Lite Shadowless and Rolrite Guaranteed Rollers—specify accordingly.

Inter-twill—the Long Wearing Shade Cloth

An improved type of shade cloth with the strength in the twill. We believe it is the toughest and strongest shade cloth and will outwear them all. It will stand abuse and rough usage. The threads will not "burn" when exposed to the sun's rays. It has special Interstate protective coating which makes it easily cleanable, reversible and long wearing. Soil is easily removed from its surface. The manner in which the twill fabric is woven insures the extra years of service. It is pure finished, and unfilled, no clay or other fillings used in the manufacture. Made in any color tone and in any combination of colors.

INTER-TWILL WINDOW SHADES
THE STRENGTH IS IN THE TWILL

"Radiant" Washable Window Shade

The feature of this cloth is that it is not only washable but that it can also be had in colors of the modern spirit: jade, peach, old rose, celestial blue, canary, sun flower, apple green, tango, lilac, sweet pea, seafoam, sapphire, amber, gunmetal, also in other pastel tones: cream, sandstone, ecru, mauve, and in duplex color combinations.

Interstate Cambric Cloth Shades

The cambric cloth used has a thread count of 72x80 and exceeds the technical requirements of the United States Government specifications No. 345 and the revised master specifications of May 22, 1928, No. 367b as to thread count and tensile strength.

Like all Interstate Shade Cloths the following brands are pure finished, unfilled; no clay or other fillings are used in their manufacture. They are cleanable and color fast.

Sunlite, a Cambric Tint—This is lightly tinted shade cloth made on unfilled cambric cloth in all the popular tints. It is translucent in lighter colors (light without glare) and semi-translucent in darker colors.

Paragon Heavy Duty Cambric—A heavier coated shade cloth, unfilled cambric, semi-opaque in lighter colors and opaque in darker colors.

Paragon is a "heavy duty" shade cloth especially adapted for office buildings.

Many attractive colors to choose from.

No-Lite, a Shadowless Shade Cloth—This a triplex process shade cloth—made on unfilled cambric cloth and is absolutely opaque in all colors. Any color combination.

The undercoat is black, making it shadowless and lightproof. Used extensively for auditoriums, X-ray rooms, and hospital laboratories.

No-Lite is used in hotels and residences where shadows would be objectionable.

Specify No-Lite when total exclusion of light is desired.

Rolrite Shade Roller

This roller does what its name implies. It rolls right because it is made right. It has a spring that is different—we call it a super-spring. This spring is made with precision of highly tempered spring steel wire fashioned by automatic machines. Ordinary springs are handmade and are often uneven in their performance. Rolrite springs render real service. All lumber used is seasoned straight-grained white pine. Every roller undergoes a number of inspections and tests and must roll right before it leaves the factory. Every Rolrite Roller is unqualifiedly guaranteed.

An all-metal Roller is made for extra wide shades.

Diameters—Rolrite wood rollers are made in four diameters: $\frac{15}{16}$, 1, 1⅛ and 1¼ in.

Metal rollers are made in eight diameters: 1, 1¼, 1½, 1¾, 2¼, 3, 4 and 5 in.

Slats are ⅞, 1¼, 1½, 1¾, 2 and 2½ in. For shades up to 60 in. wide not less than 1¼-in. slat should be used.

We recommend the following diameters: for shades up to 38 in., 1 in.; shades 39 to 48 in., 1⅛ in.; shades 49 to 63 in., 1¼ in. For shades wider than 63 in. use metal rollers.

Widths

Radiant, Sunlite, Paragon, No-Lite shade cloths can be furnished in any width up to 150 in. and in any color or combination of colors.

Inter-twill up to 130 in. wide.

Architect's Specifications

Shade Cloth—"Inter-twill" [Sunlite] [Paragon] [No-Lite] as manufactured by the INTERSTATE SHADE CLOTH CO. shall be used for all windows, and of a color to be selected (state if a solid color or duplex color is being considered).

Rollers — Interstate "Rolrite" guaranteed wood rollers of the proper diameter (for shade wider than 63 in. specify metal rollers).

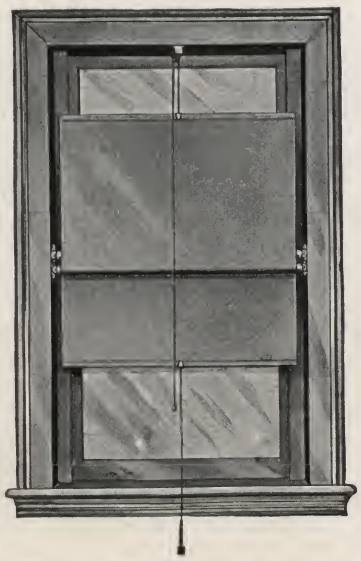
Service and Samples

Our service department will co-operate with architects in writing specifications which will prove helpful in securing estimates.

We will gladly share our knowledge of shade materials used in various types of installations and furnish sample window shades to determine color tone effect at window.

Facilities

We have ample facilities for the prompt handling of the largest contract job.



Double Hung Window Shade Installation

Two window shades are installed at center of window. One shade may be pulled up to cover upper sash, the other shade pulled down to cover lower sash. Double hung window shade installation is suitable for schools and hospitals. Permits control of light and air

THE KEMITEX PRODUCTS COMPANY

Manufacturers of Washable Shade Cloth and Window Shades

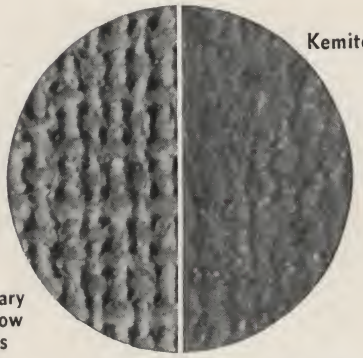
WADSWORTH, OHIO

Introduction

THE KEMITEX PRODUCTS COMPANY presents two types of washable window shades—Kemitex and Kemitex Kanvas. They are equally sunproof and washable, the main difference being in the weight of the fabric base. Kemitex is adapted for use in homes, libraries, hospitals, etc., whereas Kemitex Kanvas will withstand the rough treatment usually accorded shades in schools, colleges, gymnasiums, office, and industrial buildings. The installation of either type in its given field spells ultimate economy because there is no appreciable wear from repeated washings after years and years of use. Dirt, grease or stains cannot penetrate the chemically impregnated base of these shades, hence the ease of cleaning and the minimum wear.

KEMITEX
Washable
Window Shades

"Dirt May Be On But Never In Kemitex"



The secret of Kemitex quality and utility is its insulation—the manner in which it is made impervious to moisture, heat, dirt, sunlight, and other destructive agents

The various colors of Kemitex and Kemitex Kanvas Shades possess a remarkable ability to withstand the sun's rays for years without the least fading.

Kemitex Washable Window Shades

Advantages—*Stainproof*—Kemitex is stainproof, so discolorations such as ink, grease, paint or other similar materials wash off easily.

Washable—A sponge, a pan of water, a cake of neutral soap (like Ivory) is all that is needed to restore Kemitex to its initial beauty. No scrubbing is necessary, because all soil or stain is on the surface.

Weatherproof—Exposure to the weather, sunlight and other destructive agents ever present in the atmosphere soon tests the quality of a shade cloth. Practical tests of this kind prove that Kemitex will stand an almost unbelievable amount of hard service.

Colors—Kemitex Window Shades are available in thirteen solid colors and four duplex colors, affording a selection to match any decorating scheme. They are also made in attractive stripe styles.

Widths—Kemitex solid colors and duplex colors—36, 38, 42, 48, 54, 63 and 72 ins.



Library, University of West Virginia
Entirely shaded with Kemitex Washable

Specifications

This specification is intended to provide for all labor and material necessary for furnishing and installing complete.

Window Shades are to be Kemitex Washable (or Kemitex Kanvas). The cloth shall contain no pyroxylin or nitro-cellulose, no water soluble ingredients and shall be chemically impregnated. The shade cloth shall be pliable and properly treated to resist pinholing, cracking and breaking when folded and in use. No filling of any kind shall be used. The shade shall be waterproof, washable and color fast.

Material and Workmanship—(a) *Cloth*—All material and workmanship shall be of first quality and the best quality Kemitex or Kanvas. It shall be known to the trade and accepted as commercially perfect window shade cloth. The shade cloth shall be made of cotton, evenly woven and shall be free from an excessive number of avoidable imperfections in manufacture.

(b) *Slats*—The slats shall be of seasoned, straight grained wood and of a smooth finish. They shall be free from knots, splits, shakes and other imperfections.

(c) *Cords*—The cord to be furnished with each shade shall be of cotton thoroughly cleaned and free from waste. It shall be firmly and evenly braided and shall be free from an excessive number of avoidable imperfections of manufacture.

(d) *Rollers*—Mounted on guaranteed wood (metal) Hartshorn Rollers, as specified.

Kemitex Kanvas Heavy Duty Washable Window Shades

Our new shade cloth, Kemitex Kanvas, is made for use where a heavy duty shade cloth is required—one having the characteristics of giving long life and service. This new product is the adaptation in a modified degree of our Kemitex Process on selected 8-ounce double filling enameling duck. The merits of the Kemitex Kanvas Shades are proved by the fact that they were adopted by the Board of Education of San Antonio, Texas, after a series of very exhaustive and competitive tests.

The thorough impregnation of this Kemitex Kanvas with waterproof, age-resisting chemicals makes it impervious to sunlight and moisture as well as to the penetration of dust or dirt.

Kemitex Kanvas Shades are easily dry cleaned, or washed with soap, water and a sponge without removal from the roller.

Kemitex Kanvas Shades hold their shape because of their permanent "body." They have a clean, substantial, linenlike appearance. Suitable for clubs and apartments or for heavy duty service in schools, hospitals, hotels, industrial buildings, etc.

Colors—Ecru, linen, duplex linen and black, and solid black. Duplex linen and black is for rooms where the use of a moving picture machine is demanded; solid black is used extensively in hospitals in X-ray rooms where absolute light opacity is desired.

Widths—36, 45, 48, 55, 61, 70 and 73 ins.



St. Louis Mart
Entirely shaded with Kemitex Kanvas

THE AMERICAN TRANSOM COMPANY, INC.

Steel Door Transoms and Ventilators

Room 705, Keith Theatre Building, 1116 Chestnut Street
PHILADELPHIA, PA.

Products

IN-A-PANEL TRANSOM.
IN-A-DOOR TRANSOM.
OV-A-DOOR TRANSOM.
FIXED LOUVRE VENTILATORS.

In-a-Panel Transom

The new In-a-Panel Transom provides cross ventilation without draft through the door panel. Either open or closed, it is not possible to see directly into the room or the corridor.

The knob is pushed in to close or pulled out to open the transom.

The In-a-Panel Transom is the result of years of experiment to produce a door ventilator that permitted free ventilation through the louvres without sacrificing privacy. This is accomplished by the ingenious arrangement of the leaves of the internal shutter which is simple and substantial in construction.

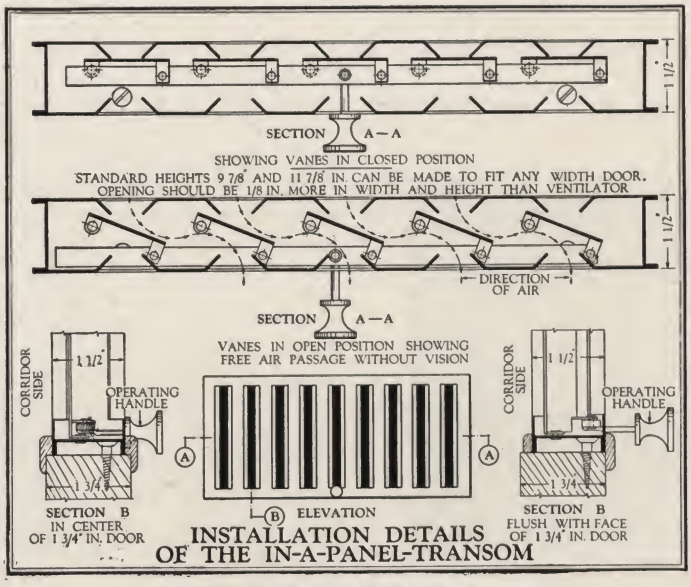


In-a-Panel Transom, Room Side

Size — In-a-Panel Transom is made for opening 10 or 12 in. high. The width is determined by the dimension between the stiles of the door.

Finish — The In-a-Panel Transom is furnished in plain baked enamel finish. The operating knob is solid brass.

Installation—Installation is easy because the In-a-Panel Transom is a complete self-contained unit.



Sectional Details of In-a-Panel Transom

In-a-Door Transom

This type, the In-a-Door Transom, has also been successfully installed in a large number of hotels, hospitals, etc. It consists of a metal ventilator with vertical fixed louvres in plain baked enamel finish. A hinged laminated wood panel to match the door is also furnished to shut off ventilation and sound. The necessary butts, screws, flush catch, etc., are included.

The standard height is 12 in., the width being determined by the dimension between the stiles of the door.

Ov-a-Door Transom

Can be furnished in any size to fit the usual transom opening over the door. Consists of a horizontal metal louvre in plain baked enamel finish with a hinged laminated wood closure panel to shut off ventilation and sound. This closure panel is also supplied with an ordinary transom operator for opening and closing.

The Ov-a-Door Transom excludes reflection of corridor lights into the room and assures absolute privacy.

Fixed Louvre Ventilators

For toilet doors and closet doors, Fixed Louvre Ventilators can be furnished in any width or height.

These louvres are the horizontal type as supplied with the Ov-a-Door Transom.

These metal louvres can be used in X-ray darkdoors, photographic darkdoors, etc., and can be made in any size to fit openings in walls, partitions, doors, etc.

THE AIROLITE COMPANY

Manufacturers of Natural Air Ventilating Equipment

MARIETTA, OHIO

NEW YORK, N. Y., 280 Madison Avenue—Telephone, Caledonia 5-6841
CHICAGO, ILL., Security Building, 189 West Madison Street—Telephone, Franklin 8259
AGENCIES IN ALL PRINCIPAL CITIES

"AIROLITE" VENTILATING LOUVERS

Description

"Airolite" is the original patented metal adjustable or stationary louver, for cross ventilation throughout hotels, apartments, schools, theaters, hospitals, dormitories and similar buildings.

They can be placed in wood, kalamein or all metal doors or in any transom space or wall, in new or old buildings.

They are complete in one unit ready for installation when shipped.

Finish—"Airolite" Louvers are finished with two coats of baked enamel, to harmonize with doors and trim.

Sizes—Furnished in any size desired and are either 1 in. or 1⅜ in. thick. In 1¾ in. doors the 1 in. louvers are installed with ⅜ in. mould on each side without mould overlapping the face of door.

Hardware—All hardware is solid brass.



Corridor View "Airolite" Ventilating Louvers, Androy Hotel, Superior, Wis.

Advantages

(1) Permit proper ventilation of rooms at all times.

(2) Shut out glare of corridor lights.

(3) Deflect air currents upward, eliminating direct drafts.

(4) Keep out intruders and prohibit view of interior of rooms from corridor.

(5) Louvers can be easily adjusted to control air currents.

(6) More easily operated and cost less than the old style transoms.

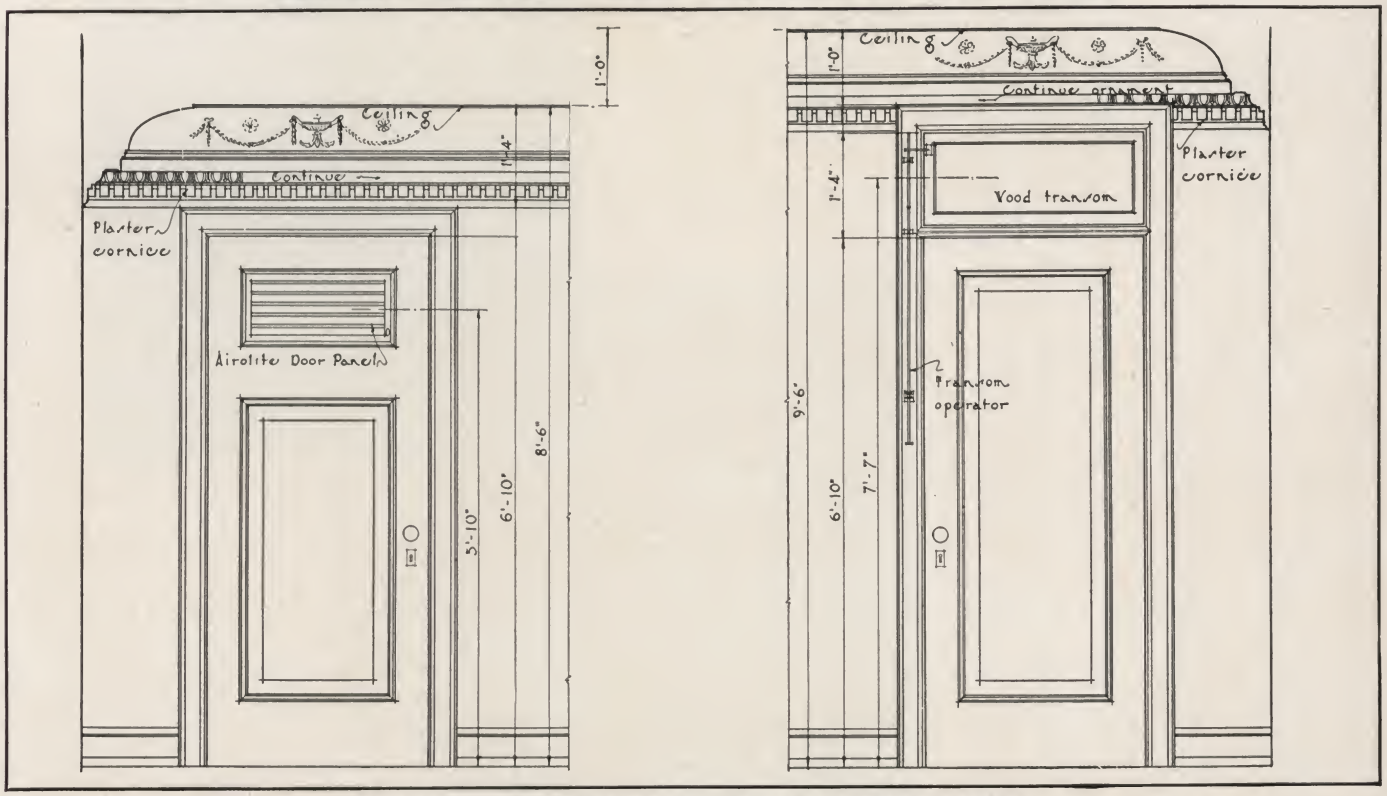
(7) Permit lower ceilings, effecting saving in building costs.

(8) Can be installed easily by carpenter or handy man.

(9) May be installed in doors of bathrooms, storage rooms and wherever ventilation is necessary or desired.

(10) Do not get out of order.

Elevations of Doors with "Airolite" Louvers and with Wood Transoms



ADVANTAGES OF "AIROLITE" LOUVERS AS ILLUSTRATED ABOVE

(1)—1′-0″ lower ceiling height on each floor.
(2)—1′-4″ margin for decoration between door trim and ceiling instead of 1′-0″ margin.
(3)—Elimination of all material and labor in the 1′-4″ between top of door and bottom of frame head.
(4)—Average ventilation height at 5′-10″ instead of 7′-7″

"AIROLITE" ADJUSTABLE LOUVERS

"Airolite" Adjustable Louvers are easily adjusted by a brass knob and cam, positive in operation, locking them either open or closed as desired by occupant of room.

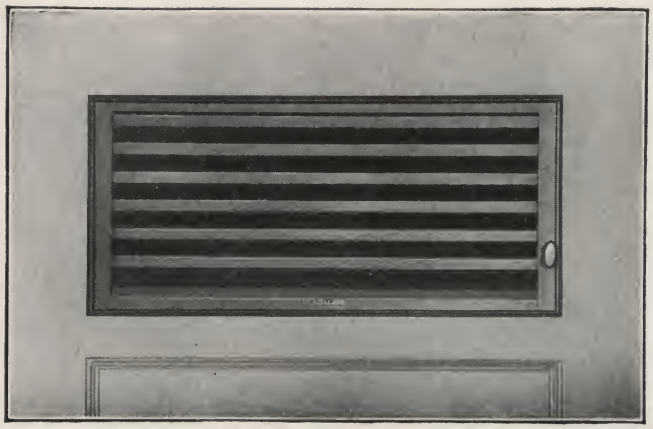
They cannot be opened or closed from the outside or by slamming the door.

An examination of the sectional views shows that the air passes through in a straight line and unobstructed. This permits the maximum volume of air for a given size of ventilator. The angle of the louvers is such that they permit a view of a small portion of the ceiling only and thus afford complete privacy. Artificial light being normally from above none enters the room through "Airolite" ventilators.

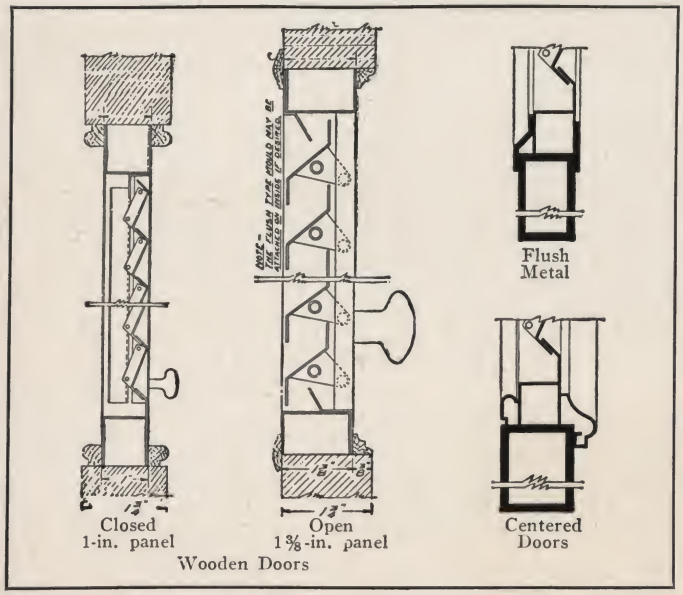
Made in two styles, (a) for installation between the stiles and cross rails of a door, (b) for installation in old and new single panel doors.

For Installation Between Stiles and Rails

Louvers are furnished with square edges to fit between the stiles and cross rails. They are held in place by suitable mouldings supplied by the door manufacturer or carpenter contractor. They may be centered or set flush with one side of the door as shown in the diagrams. It is recommended that the outer moulding be permanently installed by the door manufacturer. In metal doors the outer moulding should be welded to the door at the factory.



"Airolite" Adjustable Louver Mounted in a Door



Installation Details of Type "A" Adjustable Louvers in Stiles and Rails of Doors

For Installation in Single Panel Doors

These louvers are specially designed for use in old or new single panel doors. They are 1⅜ in. thick and equipped with steel moulding. They may be installed in wood or metal doors without cutting the permanent moulding on the doors, thus making it unnecessary to build a cross bar or rail into the door below the louver.

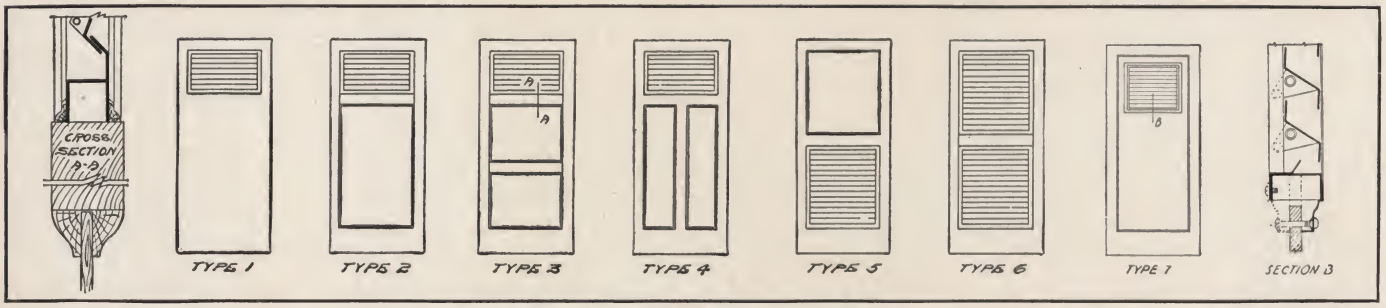
These louvers can be furnished for any size opening and the steel moulding made to fit any panel measuring from ⅛ to ¾ in. in thickness.

The steel moulding is welded to the louver on the corridor side. The louver is installed from the corridor side, and the moulding, which is furnished detached, is installed with machine screws on the room side.

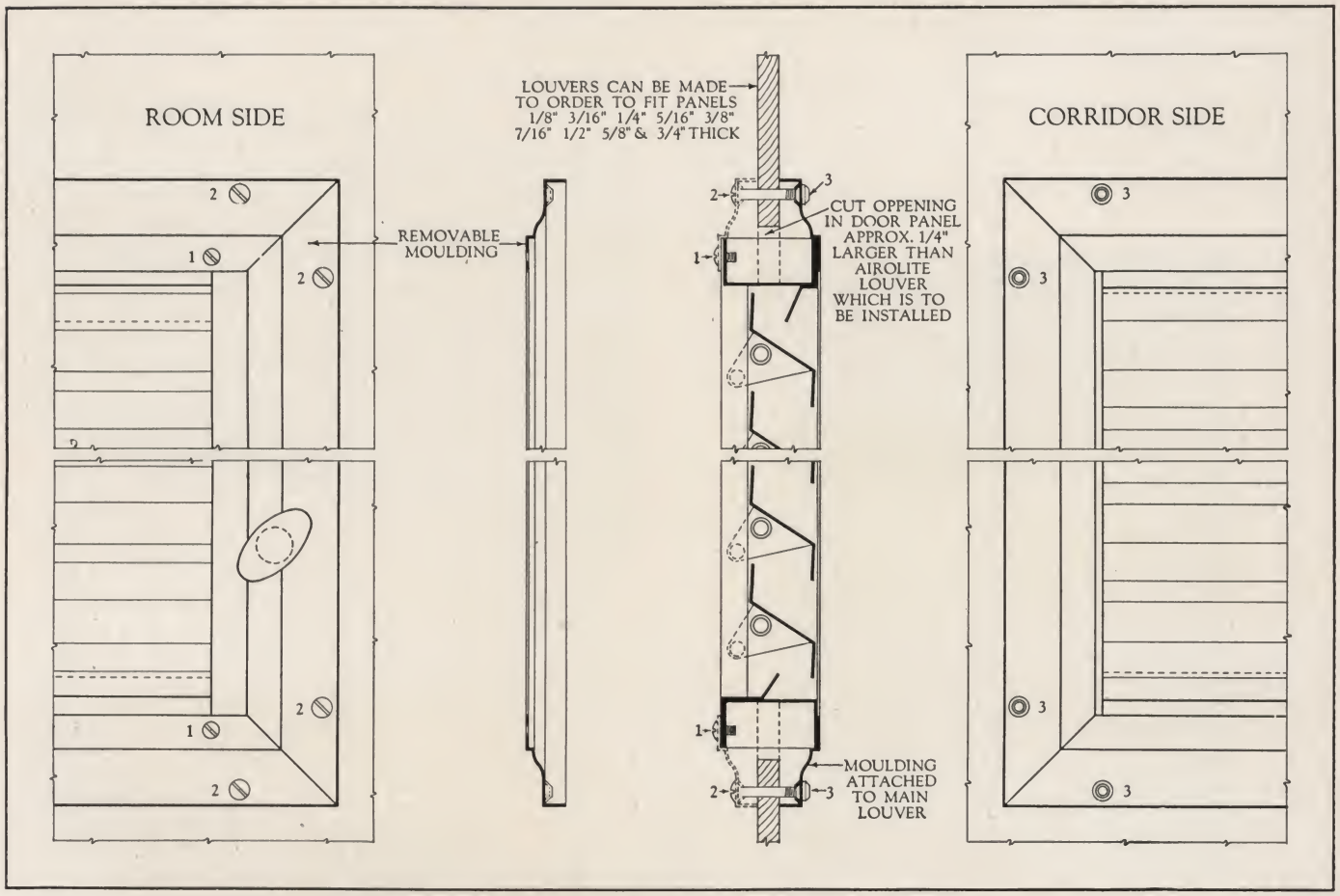
The steel moulding is furnished with all screw holes pierced, ready for installation.



"Airolite" Adjustable Louver with Steel Moulding
For single panel doors



Typical Elevations of "Airolite" Louver Installations



"Airolite" Adjustable Louver with Metal Moulding for Single Panel Doors

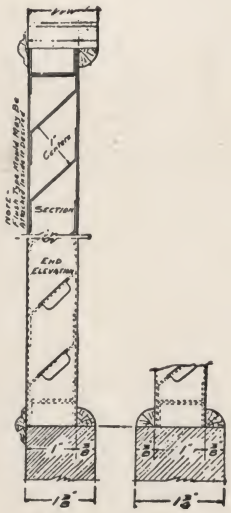
Remove all screws in louver, then lift off removable moulding. Measure the louver and cut opening in door panel approximately ⅛ in. larger all around than main body of louver. Insert louver from outside of door. Attach removable moulding to main louver from inside of door with machine screws marked No. 1, using holes marked No. 2 as template. Drill door panel, insert bolts No. 2 and turn them tight into special nuts marked No. 3, then cut ends off bolts flush with nuts. All screws and French head bolts and nuts are furnished in same finish as louver

"AIROLITE" STATIONARY LOUVERS

These louvers embody all the features and advantages of the above type except that they are not adjustable. The louvers are of the same shape but are fixed permanently in the open position. They are particularly adapted for use where constant ventilation is required such as toilets, closets, pipe chaser, attics, pantries, concealed bed closets, etc. They are installed in doors or walls in the same manner as the adjustable type and may be placed right side up in the upper part of the door or upside down in the lower section of the door. The adjustable feature being omitted they are less costly.



"Airolite" Stationary Louver Mounted in Wood Frame



Stationary Louvers
Installed in 1⅜ or 1¾-in. doors

"AIROLITE" TRANSOMS

The "Airolite" Transom is replacing the old style transom in hotels, apartments, schools, theatres, hospitals, dormitories and all such buildings where ventilation and privacy are essential.

It is furnished in practically any size desired.

Transom lift rods are made from ½"x¼" steel rod, formed to fit door trim. To make the proper bends on lift rods, dimensions "A" and "B" must be furnished.

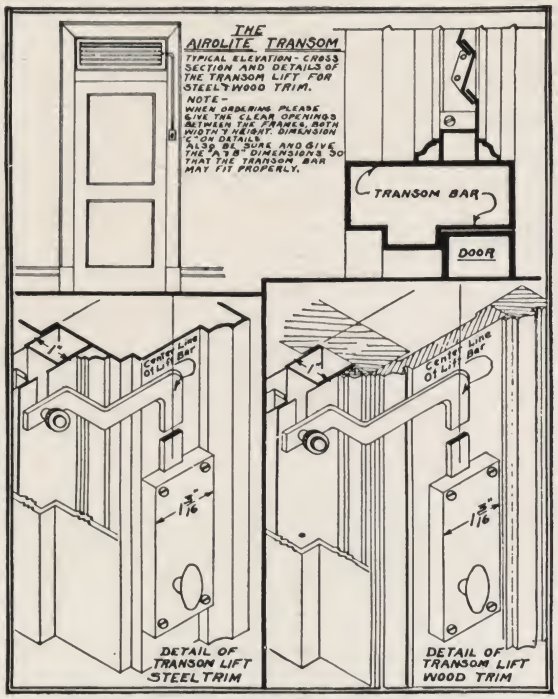
The "Airolite" Transom may be installed in place of the old-style transom, affording such advantages as shutting out corridor lights, operating more easily with less possibility of getting out of order. There is no upkeep due to glass breakage or unsatisfactory operation of adjustment rod.

"Airolite" transoms prevent prowlers from looking into rooms, and sneak thieves from crawling through transom openings.

Installed with mouldings in same manner as louvers.



"Airolite" Transom and Lift



Detail "Airolite" Transom

SUGGESTED SPECIFICATIONS FOR "AIROLITE" LOUVERS AND TRANSOMS

(For insertion in Carpentry section.)

(1) The [Carpenter] [Contractor] shall furnish and install where indicated on the drawings, in each corridor and partition door an "Airolite" ..... as manufactured by THE AIROLITE COMPANY, Marietta, Ohio.

(2) "Airolite" ..... shall be furnished in high grade baked enamel ..... solid color, not grained; they shall be equipped with operating device in solid brass hardware.

(3) The [Carpenter] [Contractor] shall furnish all moulding and other work required for installation.

SOME INSTALLATIONS OF "AIROLITE" LOUVERS AND TRANSOMS

A partial list of recent installations showing number of units installed:

Pierre Hotel, New York, N. Y.	284
Hotel St. Paul, Los Angeles, Calif.	150
Webster Hall Hotel, Pittsburgh, Pa.	688
Shore Manor Apartments, Chicago, Ill.	113
St. Mary's Hospital, Minneapolis, Minn.	221
Keystone Athletic Club, Pittsburgh, Pa.	244
Purdue University, Lafayette, Ind.	152
St. Moritz Hotel, New York, N. Y.	734
Medical Arts Building, Austin, Tex.	709
Y. M. C. A., San Francisco, Calif.	439
Westward Ho Hotel, Phoenix, Ariz.	334
Saranac Apartments, 5541 Everett Avenue, Chicago, Ill.	146
Manoir Richelieu Hotel, Pointe-au-Pic, Murray Bay, Que.	394
Nurses' Home, Johns Hopkins Hospital, Baltimore, Md.	235
Coronado Apartments, Chicago, Ill.	121
Aurora-Leland Hotel, Aurora, Ill.	235
Lincoln-Belmont Y. W. C. A., Chicago, Ill.	237
Commodore Perry Hotel, Toledo, Ohio	578
Salvation Army, Territorial Hdqts., New York, N. Y.	403
Biltmore Hotel, Oklahoma City, Okla.	774
Clinton Square Hotel, Joliet, Ill.	185
Central Hotel, Ft. Lauderdale, Fla.	140
Hillman Hospital, Birmingham, Ala.	335
Tudor City Apts., 304 E. 41st Street, New York, N. Y.	541
Victor Lawson Y. M. C. A., Chicago, Ill.	717
El Jardin Hotel, Brownsville, Tex.	169
Michigan Sanitarium and Benevolent Association, Battle Creek, Mich.	634
Fairgrounds Park Hotel, St. Louis, Mo.	231
Fairfax Apartments, Philadelphia, Pa.	251
Hilton Phillips Hotel, Shawnee, Okla.	156
Huntington Hall Hotel, Philadelphia, Pa.	251
Hotel Houston, Washington, D. C.	140
Dixie Hotel, New York, N. Y.	617
Karcher Hotel, Waukegan, Ill.	163
Lord Nelson Hotel, Halifax, N. S.	200
Plaza Hotel, Corpus Christi, Tex.	200
Pittsburgher Hotel, Pittsburgh, Pa.	484
Redmont Hotel, Birmingham, Ala.	229
Hotel Ritz Carlton, Boston, Mass.	120
Savarin Hotel, Detroit, Mich.	585
Sanger Apartment, Dallas, Tex.	168

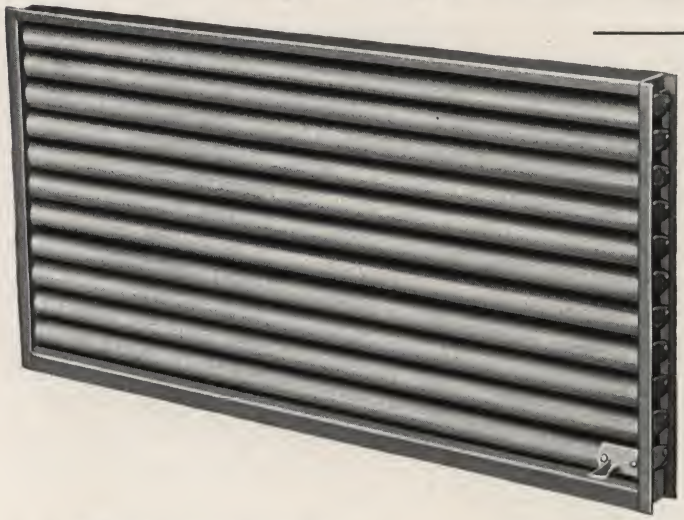
ESTABLISHED 1911

ELLISON BRONZE COMPANY, INC.

VENTILATOR DIVISION

JAMESTOWN, N. Y.

For our pages on Bronze and Aluminum Products and Balanced Doors, see Manufacturers' Index



Specifications to Be Inserted in Section Covering Doors

(1) Where indicated on plans, equip with Ellison Louvre Ventilators, as manufactured by the ELLISON BRONZE COMPANY, INC., Jamestown, N. Y., or approved equal.

(2) Finish to consist of one coat of baked-on primer, ready for painting and finishing [two coats of baked enamel, plain solid color, as may be selected] [two coats of baked enamel, grained, to match approved sample].

(3) Manufacturer to furnish louvre ventilators, complete, including the necessary screws for attaching; also such metal finish mouldings which may be required. Wood finish mouldings and installation by this contractor.

Ellison Louvre Ventilators

Types—Ellison Louvre Ventilators are ventilating panels for doors, transoms or walls. They are made in seven different types, as shown at the right, both adjustable and stationary.

Adjustable types find wide use in sleeping rooms, apartments, hotels, dormitories, hospitals, sanitariums, offices, theatre dressing rooms, staterooms, pullman compartments, etc. Stationary types are especially suitable for toilets, closets, attics, pantries, wards, air shafts, etc., wherever cross ventilation is desired.

May be equipped with fly screens at small additional cost.

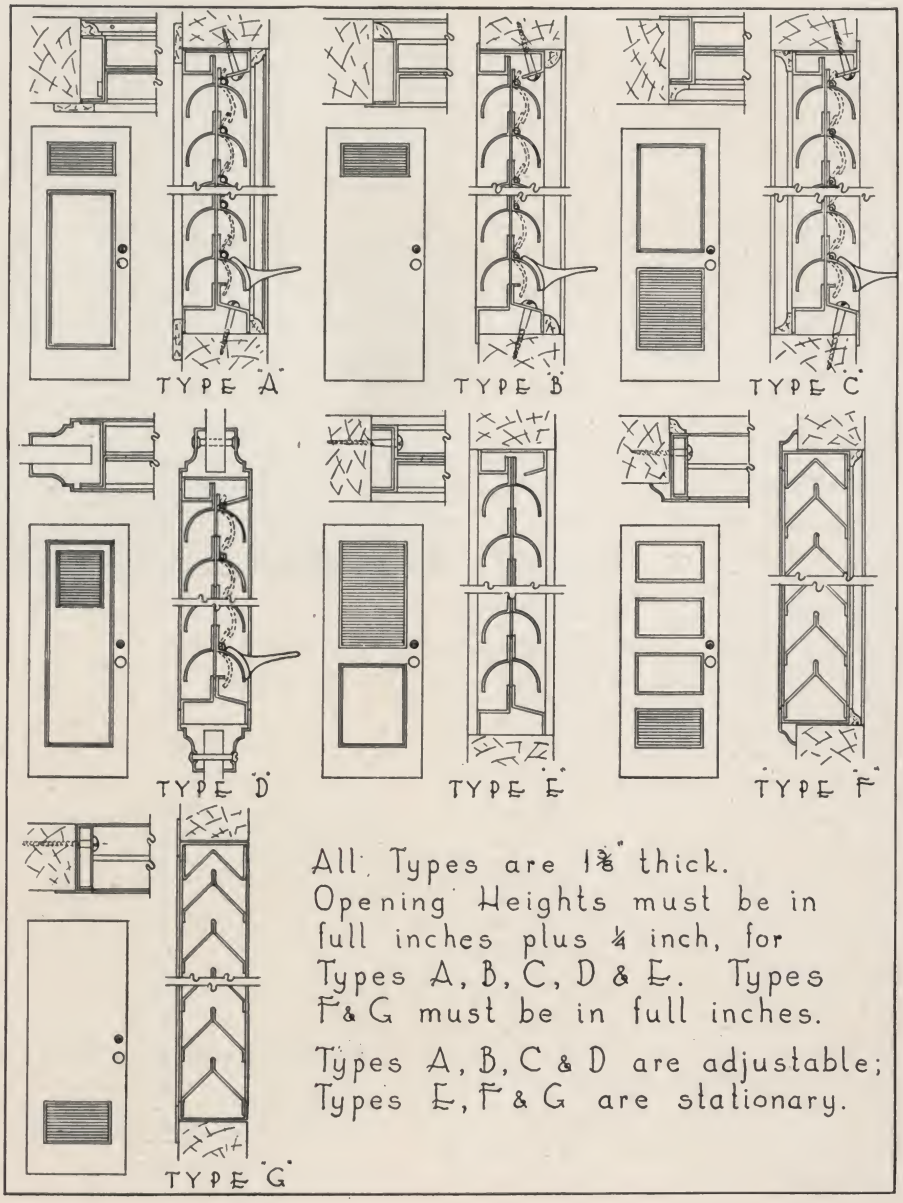
Material—Frames are of 18-gauge cold rolled steel, strongly welded. Louvres of same material, 16-gauge. Public side (outside) is rigid, reinforced and immovable; private side (inside) of adjustable types is adjustable. Operating handles are polished cast bronze.

Finish—May be finished with a prime coat, ready for painting by painting contractor; or we can finish them in a high class two-coat baked enamel, any solid color selected; or grained, as may be required.

Advantages—Provide the maximum of ventilation and are sightproof and lightproof; perfectly quiet in operation; can be painted repeatedly without interfering with their operation; no crevices or pockets to collect dust and dirt.

Installation—This is very simple, as drawings indicate.

Samples—Gladly loaned to any responsible parties for inspection and comparison. Literature and prices on request.



VAN ZILE VENTILATING COMPANY

Manufacturers of Adjustable Ventilators for Use in Doors and Transoms

280 Madison Avenue
NEW YORK, N. Y.

THE VENTADOOR

The Ventilator with Vertical Louvres and One-piece Sliding Shutter

Permits Natural Circulation of Air

The difficult problem of ventilating buildings of all kinds is now being solved by the simple method of permitting the natural circulation of air to pass through the building in the same direction in which it is traveling outside.

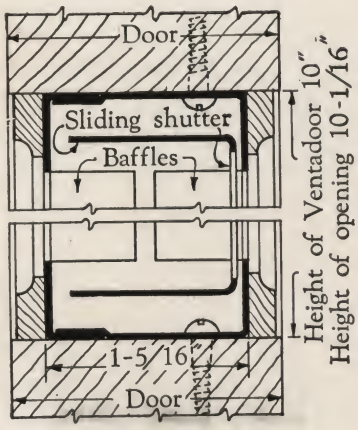


By means of adjustable metal louvres installed in the doors, the natural air currents pass through the building and are controlled by a simple sliding device.

In this manner the air coming in through the windows on one side—passes through the door, into the corridor, through the opposite door, and out of the window on the other side of the building, providing a simple, inexpensive, and practical means of ventilating the entire building by taking advantage of the natural air currents which are prevalent day and night throughout the year.

Formerly the old fashioned transom was used for this purpose, but today it is practically a thing of the past. It requires some 12 to 16-inch higher ceilings for installation, thereby materially increasing the cost of the entire building, as all walls and partitions have to be increased to this extent on each floor. High ceilings make the heating of the building more difficult and costly.

Today these problems are solved by the Ventadoor, which is attractive in appearance, simply operated, easily installed, its vertical louvres conform to the lines of the door, and it is efficient and practical in every respect. The Ventadoor prevents drafts, eliminates all view from the corridor, permits the maximum amount of ventilation, breaks up the sound waves, and is noiseless in operation.



Vertical Section
Showing Integral Shutter

Suggestions for Use

The Ventadoor can be installed in either old or new buildings at but little cost. In doors of existing buildings, it is generally impossible to install transoms unless provision has already been made for them, and the metal louvre is the only practical device that can be installed to provide cross ventilation.

The Ventadoor is usually placed in the upper part of the door in a panel formed by the rails and stiles of the door.

Where maximum ventilation is desired, Ventadoors are installed in both the upper and lower panels of the door.

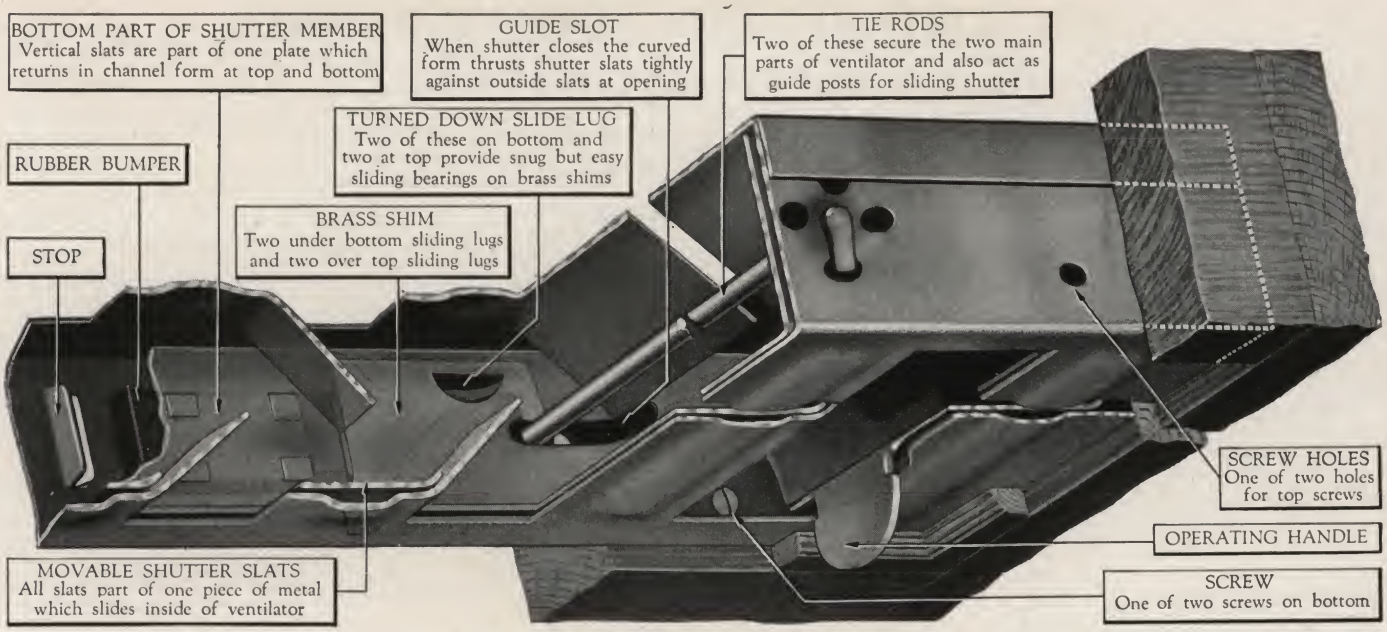
In toilet doors the Ventadoor is most serviceable when placed in the lower portion of the door, and is approved for all kinds of buildings instead of transoms.

Many of the finest buildings in the country are equipped with Ventadoors. The Pullman Company selected the Ventadoor for installation in the compartment doors of their "Presidential" series of sleeping cars.

Construction

Most of the construction of the Ventadoor is absolutely stationary. The only movable part —the shutter—is in one piece. When open it stands free from contact with the face metal and when closed is wedged tightly on both sides in close contact with metal surface in front and behind. The enclosure is essentially one piece. It cannot rattle. The Ventadoor is the only ventilator of its kind with but a single movable unit. All the ventilating slots are closed by the slats of the one-piece shutter.

In operating the shutter, rubber bumpers are provided to deaden the sound at the extremes of movement where a stop is provided.



Broken Phantom View of Ventadoor Installed in a Door Panel

Installation and Dimensions

The Company furnishes only the Ventadoor units with setting screws for fixing in place. Any mouldings needed or desired must be provided by others.

The Ventadoor is made in but one height to a single unit. It is 10 inches high. It may be made in any length. Openings should be designed accordingly. All Ventadoors are $1\frac{5}{16}$ in. thick.

Installation is made by fixing with four screws, two at the top and two at the bottom. The screws are not visible after driving.

Mouldings may be applied around the unit as desired.

Installation is most advantageous in doors $1\frac{3}{4}$ in. thick but, with proper mouldings, the Ventadoor may be placed in doors or partitions of any thickness.

Ordinarily wood screws are provided, but for metal doors or metal partitions with metal backs machine screws are furnished.

Finishes

Ventadoors are furnished with one-color coat of enamel (of any selected color intended for the final finish) or we will, when absolutely necessary, provide a priming coat baked on for finishing on the job by the painter. However, we do not recommend this latter procedure because of the danger of careless workmanship in painting which may not only mar the appearance of the Ventadoor but may also interfere with its efficient operation. *We much prefer to provide the finished enamel to match a selected sample.*

Where Ventadoors are to be placed in metal doors and it is required that Ventadoors be finished with grained finish at the factory, we recommend that delivery of Ventadoors be made to the manufacturer of the doors. In this case the Ventadoors should be specified to have a baked-on priming coat by us, of selected color, and the final coats and graining to be applied by the door maker. *We would again suggest, however, that our enamel finish be used in all cases,* conveying the frank impression that the Ventadoor is purely a metal equipment unit not requiring any imitation finish.

Specifications

The Ventadoor, as manufactured by the VAN ZILE VENTILATING COMPANY, 280 Madison Avenue, New York, shall be furnished for all doors where indicated on the drawings and shall be finished in high grade baked enamel, solid color, to harmonize with colors of the doors and trim.

A FEW TYPICAL VENTADOOR INSTALLATIONS

University of Montreal, Montreal, Canada
Lakeside Hospital Group, Cleveland, Ohio
Life Science Building and International Hall, University of California, Berkeley
Savoy Plaza, New York, N. Y.
U. S. Veterans' Hospital, Palo Alto, Calif.
Navy Central Y. M. C. A., Philadelphia, Pa.
Ocean Forest Hotel, Myrtle Beach, S. C.
Social Science Building, University of Chicago, Chicago, Ill.
Chateau Crillon, Philadelphia, Pa.
Paxton Hotel, Omaha, Neb.
The Baker Hotel, Mineral Wells, Tex.
Northwestern Y. M. C. A., Detroit, Mich.
Y. M. C. A. Building, Cincinnati, Ohio
Mayflower Hotel, Washington, D. C.
Hotel Edison, New York, N. Y.
Women's Dormitory, Ames, Iowa
Tudor City Unit No. 9, New York, N. Y.
Knickerbocker Hotel, New York, N. Y.
Ramona Hotel, Sacramento, Calif.
International House, Columbia University, New York, N. Y.
Majestic Hotel, Newark, N. J.

THE VENTILOUVRE COMPANY, INC.

280 Madison Avenue
NEW YORK, N. Y.

BRANCH OFFICES
CHICAGO, ILL., Security Building, 189 West Madison Street
BOSTON, MASS., 53 Devonshire Street
REPRESENTATIVES IN PRINCIPAL CITIES

VENTILATING WITH PANELOUVRE

Uses of Panelouvre

Panelouvre is a patented metal ventilator, with adjustable or stationary inverted "V" steel louvres.

Panelouvre can be placed in wood or steel bucks, in wooden partitions, or brick walls, as desired.

Panelouvre can be used as interior or exterior door, wall or transom intake or exhaust panel and for cross ventilation throughout the following:

Apartments
Academies
Automats
Banks
Boats
Telephone booths
Clinics
Courthouses
Churches
Colleges
Convents
Clubs
Dark rooms (X-ray, photographer's)
Depots
Dormitories
Farmhouses
Garages
Gymnasiums
Halls
Homes
Hospitals
Hotels
Institutions
Jails
Libraries
Lodges
Lofts
Museums
Mausoleums
Doctors' offices
Office buildings
Pools
Power stations
Railroads
Restaurants
Rectories
Reformatories
Residences
Schools
Stadiums
Staterooms
Steel sash (windows)
Stores
Subways
Substations
Sanatoriums
Seminaries
Tennis courts
Theatres
Universities
Y.M.C.A. buildings
Y.W.C.A. buildings
Warehouses

Detailed list of installations by local territory furnished on request.



Left:
Corridor and Room Sides of Door Equipped with Panelouvre

Showing the operating trigger. Louvres are easily opened or closed by moving the trigger up or down

Some Advantages of Panelouvres

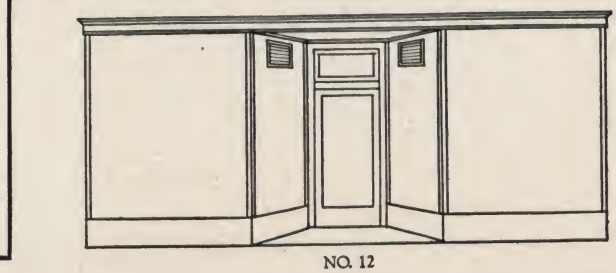
Has largest ventilating capacity.
Lightproof and sightproof, assuring utmost privacy.
Deflects air currents, thus eliminating drafts.
Operates easily without loss of motion.
Burglarproof and fire resisting.
Costs less than old style transoms, and is foolproof.
Permits lower ceilings with same door height effecting large saving in building costs.
Easily and quickly installed by any carpenter in either new or existing construction.
Furnished with metal mouldings if desired, having mitred corners.
Cannot rattle or get out of order.
Furnished in wide range of sizes and in any metal required.
Designed to stand exceptionally harsh usage and will last as long as the building.

Sizes and Finish of Panelouvre

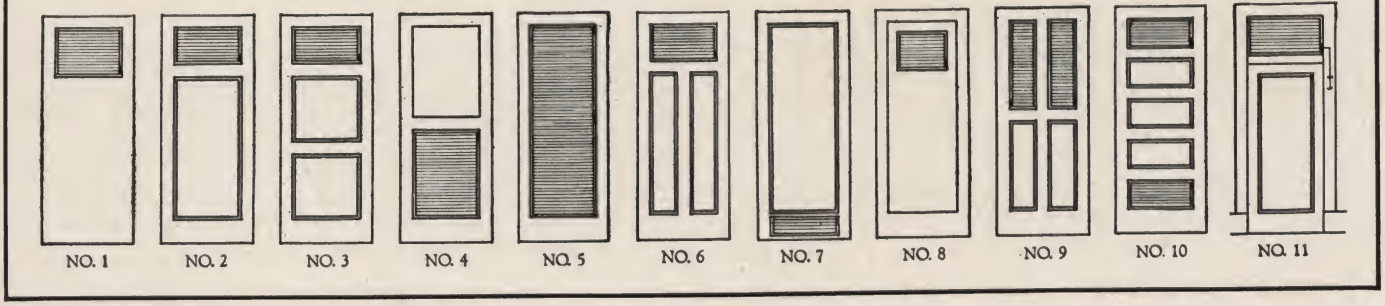
Sizes—Furnished in any width. Heights, due to design, must be held to multiples of 1 in. plus ⅜ in.—for example 6⅜, 7⅜, 8⅜, etc., and as high as necessary. Thickness, 1½ in.

Finish—Panelouvres are furnished with two coats of baked enamel, plain solid color or grained, to harmonize with the trim.

The operating mechanism is solid brass.



NO. 12

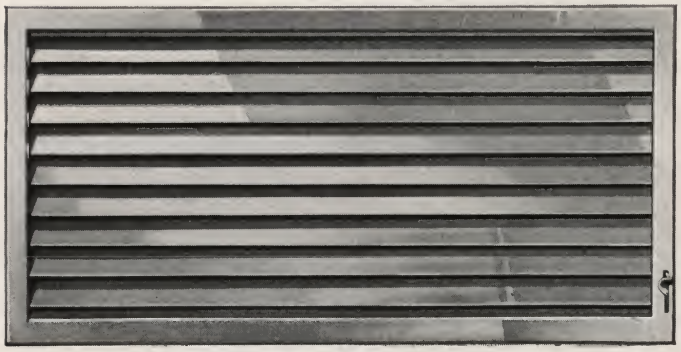


NO. 1 NO. 2 NO. 3 NO. 4 NO. 5 NO. 6 NO. 7 NO. 8 NO. 9 NO. 10 NO. 11

Typical Elevations

PANELOUVRE MODELS AND THEIR APPLICATION

Adjustable Panelouvre Model D



Type D-1 Adjustable Panelouvre

Adjustable panelouvres are furnished as a complete unit. They should be installed in wood doors after the doors are hung and all overhead work, such as plastering, has been finished. In steel doors, the installation should be made when the doors are being fabricated.

The adjustable louvres for doors are furnished in the following models:

Model D-1—With metal moulding for room side only.

Model D-2—No metal moulding furnished.

Model D-3—With metal moulding both sides, for attaching to doors 1⅜, 1½ and 1¾ in. thick.

Model D-4—With metal moulding both sides, for attaching to center door panels from $\frac{1}{16}$ to $\frac{7}{8}$ in., inclusive.

Stationary Panelouvre Model S



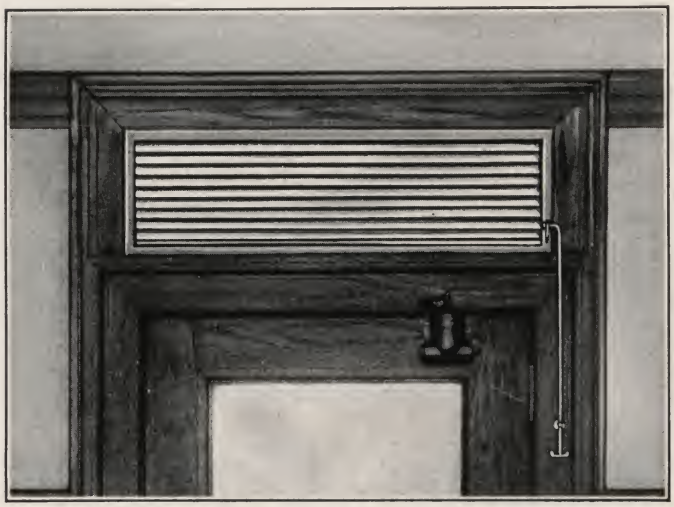
Type S-1 Panelouvre

These are furnished as complete units, and are exactly the same as the Adjustable D Models, except that operating hardware is eliminated. The stationary models are known as S-1, S-2, S-3 and S-4.

Stationary panelouvres are particularly adaptable for cross ventilation of office buildings, janitor closets, toilet rooms, powerhouses, air shafts, clothes closets, institutions, etc.

Transom Panelouvre—Model T

Panelouvre transoms are recommended in preference to the old-fashioned glass or wood panel transoms in hotels, apartments, institutions, dormitories, etc., where cross ventilation with privacy is essential and it is not practical to install the panelouvre in the door.



Panelouvre Transom with Operating Hardware

They maintain the streamlines of the corridors, thus enhancing the artistic effect that is so essential. Unlike old-fashioned transoms, they are easily operated, cannot get out of order, and require no maintenance.

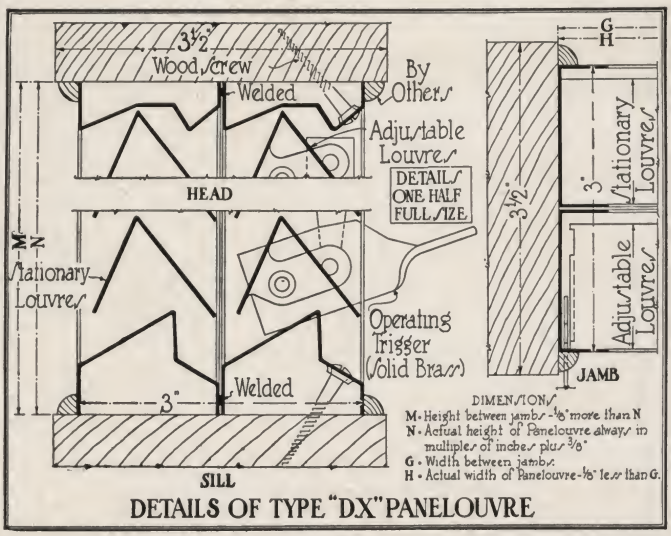
Being lightproof and sightproof they eliminate the annoying glare of corridor lights and bar intruders.

Panelouvre transoms may be used in either steel or wood bucks.

Model DX Panelouvre for Ventilating Dark Rooms

Model "DX" Panelouvres are for cross ventilation in x-ray, photographic dark rooms and similar places, due to their affording maximum controllable air circulation and absolute freedom from direct or reflected light rays. Hence, the most sensitive paper may be used without fogging.

These louvres can be furnished lead coated or in baked enamel finish of whatever color desired.



DETAILS OF TYPE "DX" PANELOUVRE

Summer Door Model SD Panelouvre

This is an enlarged Model "D" Panelouvre and is light, sight and burglarproof. The upper and lower halves operate independently, locking themselves so they cannot be operated from the outside.

The use of this model for clubs, dormitories, hotels, porches, etc., requires one door and one set of hardware only.

A narrower jamb may also be used, which is more economical than using a solid door plus an auxiliary wood slat door.

Sizes — The minimum height is 36⅜ ins. Other heights run in multiples of inches plus ⅜ in.—like 37⅜ ins., 38⅜ ins., etc. In width, it can be supplied in any fraction of an inch up to and including 40 ins.

Louvres — Inverted "V" shape, made of 18-gauge cold rolled steel. Assembled on 1-in. centers with ½ in. between bottom edges, they eliminate light and vision, prevent drafts, and afford maximum air delivery. When closed they form a flush panel on room side. They lock themselves and cannot be opened or closed from the outside. Rattles are impossible as they are under tension at all times.

Frame—All frame members are of 18-gauge cold rolled steel channel, ½x½x½ in. Top and bottom members are specially designed to prevent dust collecting, with countersunk screwholes through which screws are fastened into the door rails. Corners are drawn and spot-welded, and both faces of frame are flush.

Moulding—Cover moulds, whether for one or both sides, are of 18-gauge cold rolled steel. The room moulding extends past the frame ½ in. all around. All corners are mitred, with the room side usually an integral part of the frame. These metal cover moulds greatly enhance the appearance of the installation.

Operating Hardware

A solid brass operating trigger opens or closes the Panelouvre by a cam motion.

Adjustment is easy and positive, with no possibility of getting out of order, and any degree of opening desired can be had.

The operating trigger can be located in any one of the four corners of the room side—or if adjustability is desired from the outside also, and operating trigger can be placed on both the room and corridor face.



Type SD Panelouvre in a Summer Hotel

Installation Instructions

Provide opening ⅛ in. larger than Panelouvre in both width and height.

Insert Panelouvre and fasten with screws supplied with order through top and bottom frame. Attach wood or metal moulds as detailed.

Other Models

Due to the fact that Panelouvres are made in many different models to suit existing conditions, it is impossible to illustrate all the various types here. Among these are the following:

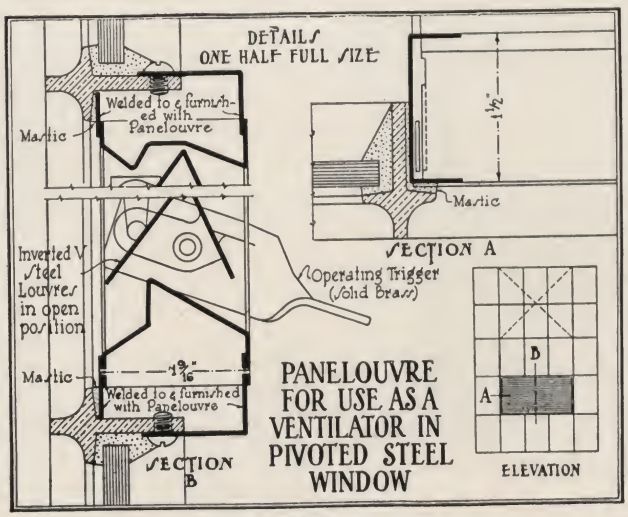
Models "A" and "B" Door and Wall Fire Louvres—With fusible links and weights for closing in the event of fire.

Model "DO"—For exterior doors, which is equipped with screen, cane grille and steel enclosing panel for cold weather.

Model "TS"—Designed for use as a fresh air intake in exterior walls in front of radiators, etc. Complete details will be supplied on request.

Panelouvre Installations

Panelouvres are furnishing economic and satisfactory service in a wide range of new and existing buildings, constituting practically every type of construction. A list of installations will gladly be furnished on request.



Model PW Panelouvres
For Pivoted and Projected Windows

Details of this model for use in steel sash in factories and other types of buildings as shown. This model fastens directly to the muntin bars in place of the glass pane.

Set in mastic cement it becomes watertight. The louvres are weatherproof whether open or closed

Suggested Specifications

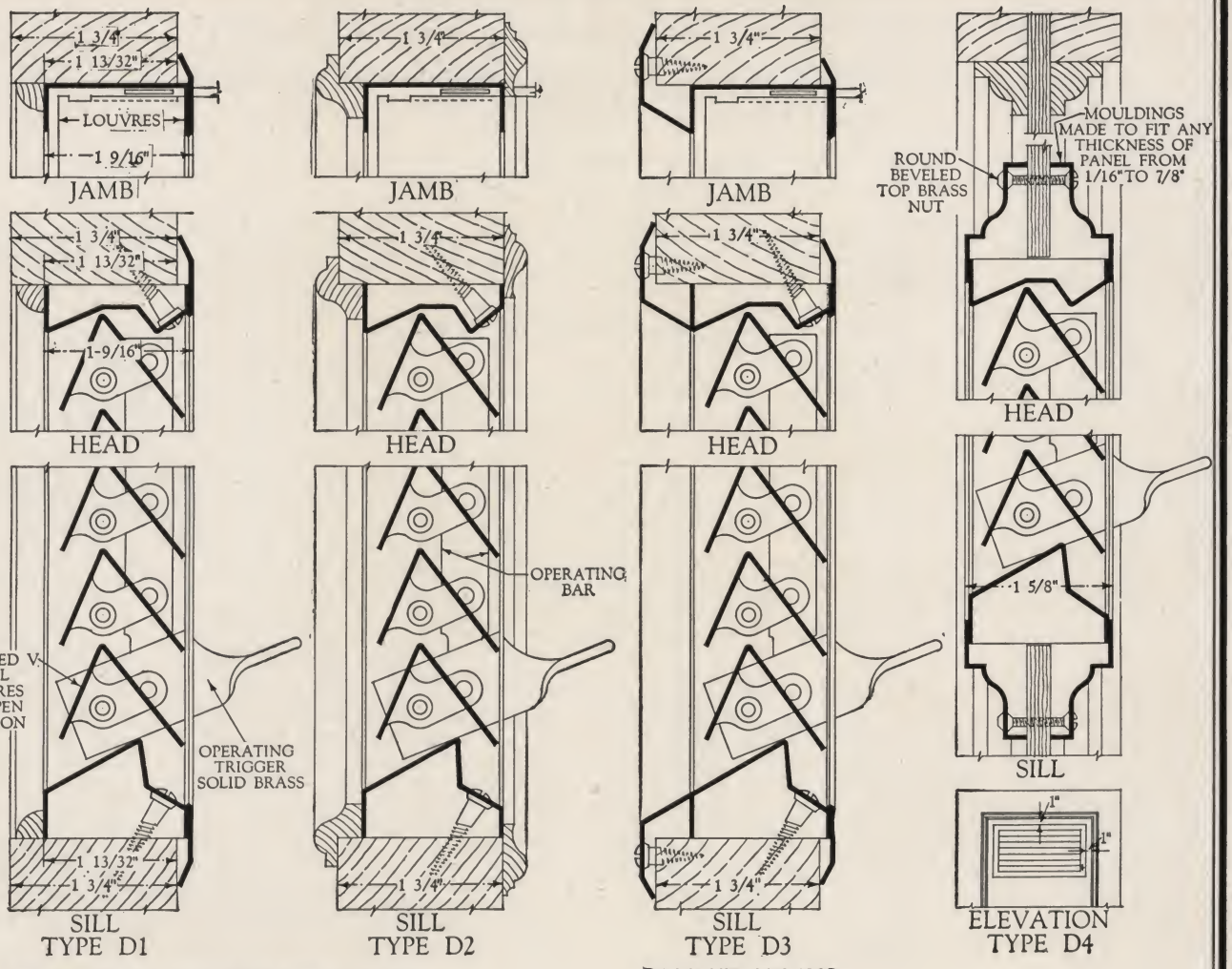
(Insert in Carpentry Section if wood doors are used, or Hollow Metal Door Section if hollow metal doors are used.)

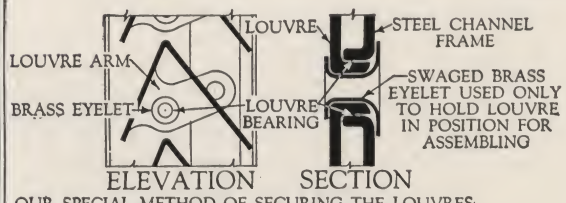
(1) The (contractor) shall furnish and install as shown on plans, Panelouvres as manufactured by THE VENTILOUVRE COMPANY, INC., New York, N. Y., with (adjustable or stationary) "V" type louvre blades.

(2) Panelouvres shall be finished in two coats of baked enamel, harmonizing with color sample to be submitted by contractor. All samples of finish shall be approved by the architect.

(3) Hardware for adjustable Panelouvres shall be solid brass, buffed and polished.

(4) Metal mouldings as detailed shall be furnished by the manufacturer. (If wood mouldings are used they should be furnished by the contractor.)

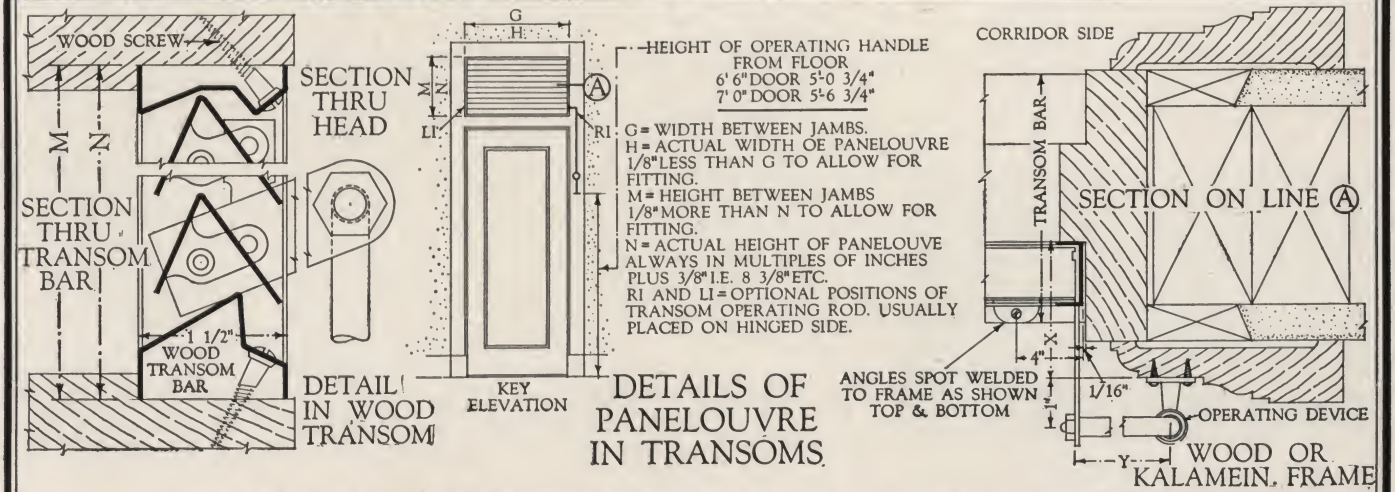




OUR SPECIAL METHOD OF SECURING THE LOUVRES ASSURES LONG LIFE AS WELL AS PREVENTING THE LOUVRES FROM BEING FORCED OUT OF POSITION

LOUVRE BEARING AT FRAME

DETAILS OF PANELOUVRE IN DOORS



GENERAL CONSTRUCTION OF PANELOUVRES

ESTABLISHED 1893

IDEAL VENTILATOR CO.

ORIGINATORS AND PATENTEES OF GLASS WINDOW VENTILATORS

Manufacturers of the Ideal Window Ventilator

160 Atlantic Avenue, PROVIDENCE, R. I.

VENTILATE THE IDEAL WAY

Deflectors of the Ideal type are especially adaptable to schoolrooms and various large buildings where many persons work or congregate, and have been recommended by the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association.

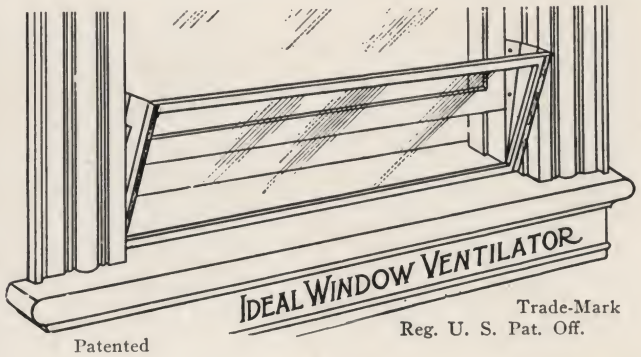
Ideal Ventilators

Ideal Ventilators have been made and distributed for the past 39 years by this organization. Recommended by architects, engineers, contractors and boards of education. Their efficiency is not confined to offices and factories, but they have found high favor in schools, hospitals, homes and public buildings.

They are easily installed and do not interfere with screens, shades or draperies.

The ventilator complete consists of two parts: the ventilator proper and a pair of metal adjustable or stationary brackets.

The ventilators slide into these metal brackets from which they are instantly removable for cleaning or other purposes.



Patented

Trade-Mark
Reg. U. S. Pat. Off.

Wooden Frame Ventilators—Light, strong and made of the finest materials. Woods are selected, well seasoned and kiln dried. Glass is "A" quality window and is encased in a wooden frame 11½ ins. high and made as wide as the window in which it is to be used.

Wooden frame ventilators are furnished in regular stock finishes as follows:

Light oak	Weathered oak	Light cream
Golden oak	Walnut finish	Dark cream
Flemish oak	Mahogany finish	Pearl gray
Green oak	Enameled white	

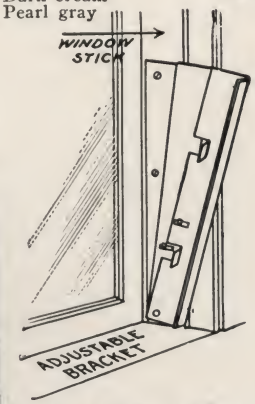
Special finishes to order.

Plate Glass Ventilators—A style much in demand. The unframed, clear plate glass presents a neat unobstructed window. Ideal glass is "A" quality, ¼ in. thick and furnished any width desired.



Installation in Office of Commissioner of Health, State of Massachusetts, State House, Boston, Mass.

State house completely equipped with Ideal Ventilators



Ideal Adjustable Type Bracket for Framed Ventilators

Ideal Ventilator Brackets

Adjustable Brackets for Framed Ventilators—Designed for wooden or metal framed ventilators only. They will accommodate frames 11½ ins. high, can be adjusted to set parallel with the window or at an angle of 30 degrees.

Brackets are furnished in steel or brass. Steel brackets are copper plated and oxidized. Brass brackets are satin finish or are nickel plated.

The New Anti-rattle Brackets for Plate Glass Ventilators—The New Ideal Brackets (Patent No. 1660972) are for plate glass ventilators only and are designed to eliminate the annoyance of the ventilator rattling against the metal brackets. All clamps on anti-rattle brackets are made of brass, properly tempered to allow for bending so that any thickness of panel can be used and held firmly. Should glass become broken, the brass clamps act as holders to prevent panels being dislodged.

These brackets have been selected as the standard equipment for the Empire State Building, New York City.

Brackets furnished with or without glass ventilator, thereby permitting the purchaser to procure the glass from local dealer, eliminating boxing and transportation charges.

Stationary Type—Stationary type brackets are designed to accommodate panels exactly 12 ins. high and to set at an angle of 30 degrees.

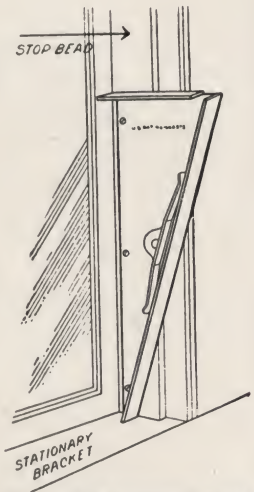
All stationary brackets are made of steel with sprayed lacquer finish. Stock colors are white, black, brown, Brewster green, maroon and cream. Special colors to order.

Adjustable Type—Adjustable brackets are controlled by friction clips thereby permitting the air to be deflected at any angle desired by simply opening or closing the brackets to meet either individual requirements or atmospheric conditions. They are unquestionably one of the most efficient ventilator brackets on the market.

Adjustable type brackets are designed to accommodate panels 11¼ ins. high and can be adjusted to set parallel with the window sash or at angle of about 30 degrees.

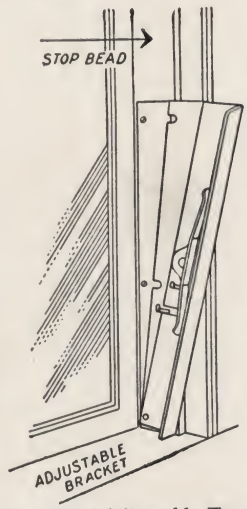
All adjustable brackets are made of either steel or brass.

Steel brackets are heavily copper plated and oxidized, or bronze plated. Brass brackets have satin finish.



New Ideal Stationary Type Bracket for Plate Glass Ventilators

Patent No. 1660972



New Ideal Adjustable Type Bracket for Plate Glass Ventilators

Patent No. 1660972

Typical Installations

Ideal Ventilators have been installed in many well known buildings a list of which will gladly be furnished on request.

ESTABLISHED 1880

THE BOSTWICK-GOODELL CO.

Manufacturers of Victoria Venetian Blinds

NORWALK, OHIO

Victoria Venetian Blinds

Of approved manufacture for over thirty years.

Preferably made from thoroughly dry basswood with cream enameled finish, and fully guaranteed against warping and splitting.

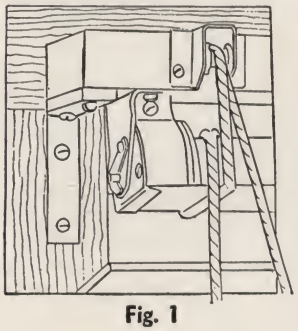


Fig. 1

Head Piece—2¼ in. wide by 1⅛ in. thick, and as long as width of window opening, when blind is installed within the opening.

Top Tilting Bar—2⅜ in. wide by ⅞ in. thick, secured to head at each end with sheet metal brackets, metal clips over each end for additional strength. (Figs. 1, 2 and 3.)

Automatically held at any angle with an all-metal spring (Fig. 1), adjustable to any degree, without removing blind from window and instantly detachable from head by raising the metal dog at right-hand end. (Fig. 2.) Worm gear tilt also supplied.

Slats—2⅜ in. (or 2 in. or 1½ in.) wide by ⅛ in. thick. Any color or combination of colors.

Tapes—Best quality domestic, also imported stamped and approved qualities.

Cords—Flexible heavy woven and glazed to minimize wear. Tilting cords operate in front. (Fig. 1.). Raising cords either front lift (Fig. 2) or end lift (Fig. 3) as desired.

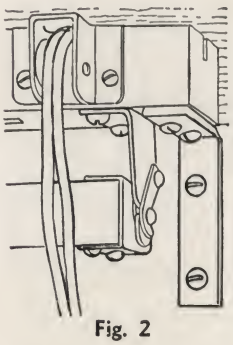


Fig. 2

Pulley Wheels—Cold rolled steel or brass or double race ball bearing.

Sill Brackets—
No. 32 (Fig. 4).

Side Sill Brackets—
No. 34 (Fig. 5).

Operate in connection with heavy metal pins in end of thick bottom slat, that has sheet metal clip on each end to prevent breakage.

Hardware—Steel brass finish, or solid brass.

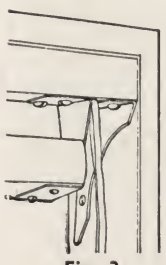


Fig. 3



Fig. 4 Sill Bracket No. 32

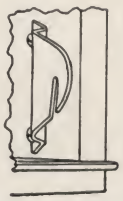


Fig. 5. Side Sill Bracket No. 34



Solid Brass Cord Clip No. 103
For raising cords, keeps slats horizontal

Installation—Very easy with two or more 2¼-in. No. 12 round head screws through head into overhead jamb or casing or *inside brackets* at each side of jamb supporting the blind between stops or jambs (Fig. 3), or *angle brackets* (2½ in.) supporting the blind on face of subjamb or face of casing (Figs. 1 and 2), or Universal bracket No. 110, with or without front spring.

Type E.L. (Easy Lift)

Has pulleys also in thick bottom slat that makes a blind "Easy Lift" and is recommended for blinds over 50 in. wide.

Roll Head and Oscillating Roll Head Blinds

For both large and small windows.

Type S.R.

Has a ⅜-in. thick slat about every ten or twelve slats, with brass rings operating on $\frac{3}{16}$-in. brass rods at each side of blind.

Type R.O.S.

Has brass rings on thick bottom slat and on every other or every third slat, operating on $\frac{3}{16}$-in. brass rods at each side of blind. (Fig. 7.)

Metal Side Guides

Either solid brass or steel brass finished. Either ½-in. square with open seam; ½-in. round open seam tube with brass ball bearing fixture (Fig. 8) or metal shoe fixture or ¼x½-in. square with metal shoe.

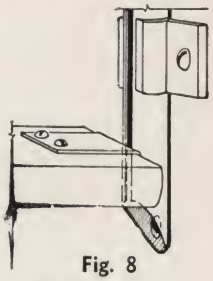


Fig. 8

Metal Shoe No. 84

(With brass clip.) Can be used with either square channel or round tube and by some is preferred to ball bearing fixture. (Fig. 9.)

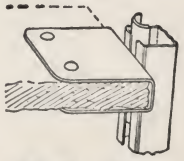


Fig. 9. Metal Shoe No. 84

Brass Eyelet No. 59

May be had in the slots through which the cords pass in the slats.

They add to the strength of the slats and make a perfectly smooth edge, preventing wear on cords.

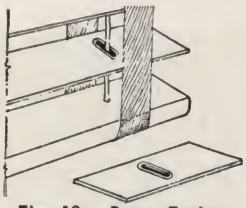


Fig. 10. Brass Eyelets No. 59

Eureka Type Blinds

Metal chains instead of cords.

Double ladder, detachable tapes.

Removable slats with tenoned ends operate in wood guides.

ESTABLISHED 1882

BURLINGTON VENETIAN BLIND COMPANY

Manufacturers of Venetian Blinds, Sliding Blinds, and Insect Screens

BURLINGTON, VT.

REPRESENTATIVES IN ALL LARGE CITIES

BURLINGTON VENETIAN BLINDS

Keep Out the Sun—Permit Perfect Ventilation—Control the Light

A Company Specializing in Venetian Blinds

Venetian Blinds have been a specialty of this company for fifty years and have been improved from time to time to make them as perfect as is possible. Improved methods of production have reduced costs and increased factory capacity; no order is too large to be executed promptly.

Burlington Venetian blinds are installed throughout in many of the prominent buildings of the country, and a list of installations will be gladly furnished on request to this office or to our representative in any large city.

Manufacture

All our blinds are made to order only. They are the output of a large, well equipped factory, employing men skilled in this line. Sizes of blinds are secured by our representatives as well as the color of finish desired. Each order is then run through the factory according to the specifications for that order.

Quality of Materials

Slats—We use only the best quality of materials which in our experience has given satisfactory and lasting construction. All wood used is first air dried in our own yards and is then kiln dried. Unless some other wood is specified we use linden, as we consider it the best obtainable for this purpose and gives the best results. It is light, durable, does not twist and will take any kind of finish. Other woods will be used, however, if so desired.

Sizes of Slats—Slats 1/8 in. thick and 2 3/8 in. wide are generally used. In small windows, slats 2 in. wide are used. The blinds with the wider slats are lower priced as fewer slats are required.

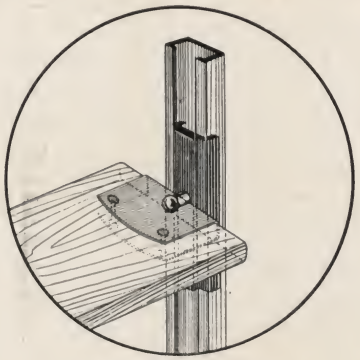
Ladder Tape—The tape and the interwoven cross straps supporting the slats are of the very best quality of imported or domestic manufacture.

Finishes

Blinds are finished natural wood varnished, stained and varnished, painted, enameled or lacquered in any color.

Cord

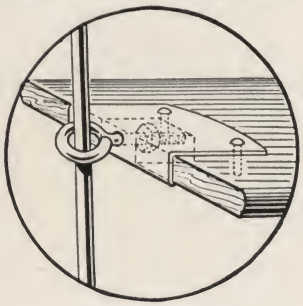
We use a hollow braided cord as it does not twist when handled. It is specially treated to prevent wear.



Channel Guide Type

Side Guides

Side guides can be furnished when desired. These are of two types, the extruded brass, aluminum or steel channel type and the brass rod type. The shoes running in the channels and the rings running over the rods are secured to heavy slats which are spaced every sixth or seventh slat, depending on the height of the blind.



Brass Rod Type

Burlington Venetian Blinds Tilt Easily and Noiselessly

The tilting of slats in all types of our blinds (slats are "raised" flat under each other) is accomplished easily and noiselessly by operating a cord at the left of the blind.

They are held fixed at any angle until changed by a friction spring which is one of the features of our blinds. This spring presses against the right-hand hanger.

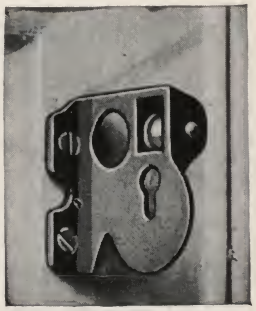
The tension of the spring may be adjusted by turning a round headed screw which holds the spring in place as well as supporting the top tilting rail.



Spring on Top Rail
Engaging with hangers and holding slats at desired angle



When Attached to Stop Beads or Subjambs



When Attached to Face of Casings



When Attached to Top of Window Frame

Right Hand Hangers for "Burlington" Type Venetian Blinds

Construction

We especially call your attention to the simplicity of construction; few mechanical parts to get out of order and wear out.

Ease of Installation

All of our blinds are shipped completely finished with the necessary hardware for proper installation of each type of blind.

As each blind is built to fit each opening they are easily installed with a few screws.

TYPES OF BURLINGTON VENETIAN BLINDS
The Modern Window Furnishing



"Burlington" Type
For windows up to 24 sq. ft. Operating and tilting cords



Burlington "Head Piece" Type
For windows larger than 24 sq. ft. Pulley operated



Burlington "Roller" Type
For any size window. Held at any height without securing tape



Circular Top with Horizontal Slats



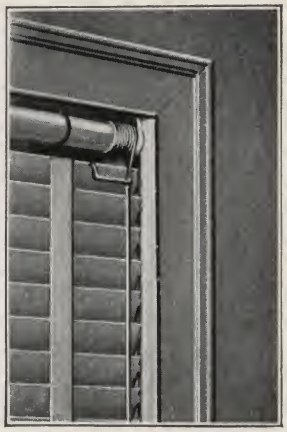
Circular Top with Radial Slats



Cord Knob Holds Tilting Cord Taut



Horned Hook or Cord Hook for Operating Cord



"Junior Roller" Type Showing Blind without Ratchet

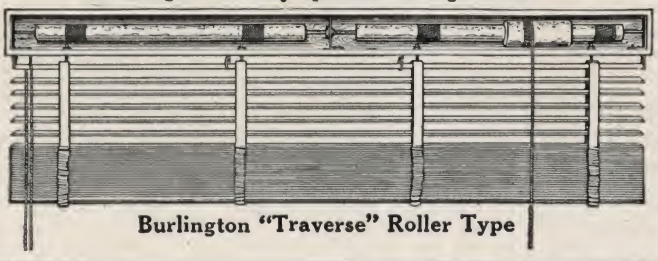
Raising and Lowering of Blinds

All our blinds are raised and lowered easily and, except the "Roller" Type, are secured at any desired elevation by a single turn of the cord around a horned hook secured to the jamb or trim.

Note: The operating cord is regularly placed at the right side of the blind but, when conditions require it, the position of operating and tilting cords may be reversed.



Burlington "E-Z Lift" Type
Designed for easy operation of large blinds



Burlington "Traverse" Roller Type

THE COLUMBIA MILLS, INC.

Manufacturers of Venetian Blinds
Window Shades, Shade Cloth, Shade Rollers, Awning Rollers

225 Fifth Avenue
NEW YORK, N Y.

BRANCH OFFICES

BALTIMORE
BOSTON
CHICAGO
CINCINNATI
CLEVELAND
DALLAS
DENVER
DETROIT
KANSAS CITY
LOS ANGELES
MINNEAPOLIS
NEW ORLEANS
SEATTLE
NEW YORK
PHILADELPHIA
PITTSBURGH
PORTLAND
ST. LOUIS
SAN FRANCISCO

Sales Channels

Columbia Venetian Blinds are sold by authorized dealers located throughout the country. These dealers have been appointed for their responsibility and their ability to best meet the requirements of architects. They are fully prepared to co-operate with the profession in planning and in carrying out any installations. The name of the authorized dealer in your locality will be furnished on request. His services can be fully relied upon and will meet with your approval.

Columbia
PERFECTED
VENETIAN BLINDS

Architectural Service Department

The Columbia Architectural Service Department will gladly submit samples of Venetian Blinds to those interested. An experienced man will assist you in solving your blind problems and in the preparation of any necessary specifications. Each one of our branches has an architectural service department, through which you may be assisted in the selection of proper window treatments. These departments will be glad to recommend reliable dealers to supply your needs.

PURPOSES AND ADVANTAGES OF COLUMBIA VENETIAN BLINDS

Columbia Venetian Blinds are the result of research by illuminating engineers and Columbia designers to provide control of light without loss of ventilation at all types of windows. With Columbia Blinds you may have full or partial daylight without impairment of ventilation.

Columbia Blinds embody the following features:

Control of light and ventilation.

Regulation and deflection of the light, just as well when the window is open as when it is closed. This means privacy without the need of first closing the window. It means that glaring sunlight can be excluded or softened without the loss of ventilation.

The far corners of the room are actually made lighter. Tests with Columbia Blinds have shown that the illumination in the darker portions of the room is increased 100-130 percent without unduly lighting the area nearest the window.



These blinds offer all the good points of shades and awnings, and have many advantages over the more common types of window treatments. They do not have to be taken down and put up each season as do awnings. For this reason alone, the maintenance cost is very little.

Columbia Venetian Blinds are practically universal in their application. They can be used on any type window, skylight, transom or glass door. They are suitable for all types of buildings, both private and public. They can be installed on the inside or face of the window casing.

Columbia Blinds are giving dependable service in homes, schoolrooms, offices, libraries, banks, and many other kinds of public and private buildings.

A FEW RECENT INSTALLATIONS

Cornell Medical Unit, New York, N. Y.
County Clerk Building, Oswego, N. Y.
Batavia Court House, Batavia, N. Y.
Philadelphia Savings Fund Building, Philadelphia, Pa.
Trianon Ballroom, Chicago, Ill.
U. S. Court of Claims, Washington, D. C.
Washington Telephone Co., Washington, D. C.
Cincinnati Times-Star Building, Cincinnati, Ohio
Detroit Edison Company Building, Detroit, Mich.
Schuylkill County Court House, Pottsville, Pa.
Atlanta University Library, Atlanta, Ga.
U. S. Botany Building, Cincinnati, Ohio

THREE BRANDS OF COLUMBIA VENETIAN BLINDS

Columbia manufactures three brands of Venetian Blinds, each for a purpose all its own.

These are the *Standard, De Luxe,* and *Residential* brands.

Columbia Standard Venetian Blinds

Columbia *Standard* Blinds are particularly suited for windows of small or moderate size where an inexpensive but practical blind is desired. While not possessing many of the special features found in other Columbia brands, they will nevertheless render long and trouble-free service.

The slats on the *Standard* Blind are made 2⅜ in. wide. All edges and slot holes are smoothly made, with the rough edges removed. The slats are painted with a semi-gloss lacquer finish. A friction tilting device provides for the tilting of the slats to any angle, where they are held securely in place. The ladder tapes are made of a high-grade fabric, the cross-tabs being woven directly into the vertical tapes. Slider guides may be provided to prevent blinds from swaying caused by wind pressure.

The *Standard* Blind is available in the following regular colors: Eggshell White, Colonial Ivory, Salon Gray, Fawn, Light Olive, Foliage, Natural Wood, and Mahogany. Lifting and tilting cords are furnished in white.

All hardware is nickel-plated, except where slider guides are installed, in which case the hardware is copper-plated to match the bronze guides. Special colors of slats, tapes or cords may be supplied at extra charge.

Columbia De Luxe Venetian Blinds

Columbia *De Luxe* Blind combines mechanical excellence with beautiful appearance. It embodies many features that make it ideal for purposes where a blind of the highest quality is desired.

A special feature is the Worm Gear Tilt Control Device. It enables the slats to be set at any angle, holding them securely in place. Another feature is the use of Columbia Universal Brackets in hanging the blind. The blind slides into these and easily may be removed without the use of tools. The slats are made of the best seasoned woods, that will not warp out of shape. They are 2⅜ in. wide, and are carefully made. They have a semi-gloss Velvet Finish. The ladder tapes are a high-grade fabric, having the cross-tabs woven directly into them. Slider guides may be provided to prevent blinds from swaying caused by wind pressure.

These blinds come in the same color line as used for the *Standard* Blind. The tapes are linen color. Special colors available at extra cost.





Columbia Residential Venetian Blinds

The *Residential* Blind is particularly smart, designed especially for homes. Its chief feature is the narrow, 1¾-in. slats that give the blind a compact appearance. In most cases it can be hung directly to the stop-bead of the window. Being made for residential windows, it is not manufactured in sizes over 65 sq. ft.

The hardware, in keeping with the general design of the blind, is neat and unobtrusive. The slats are carefully smoothed and finished. They are painted with a high-grade enamel. An efficient device is used for easy tilting of the slats. The ladder tapes are made of a high-grade fabric, the cross-tabs being woven directly into the tapes. Guide rails may be installed where wind pressure might cause the blind to sway. Columbia Universal Brackets are used for hanging.

The *Residential* Blind is made in fourteen attractive colors: Eggshell White, Colonial Ivory, Peach Skin, Salon Gray, Horizon Blue, Fawn, Canary, Nile, Light Olive, Foliage, Natural Wood, Spanish Tile, Mahogany, and Van Dyke Brown. The tapes come in the following colors: White, Linen, Light Buff, Apple Green, Chocolate, and Black. Special colors are available at extra cost.

OPERATION AND INSTALLATION OF COLUMBIA VENETIAN BLINDS

Operation

The operation of Columbia Venetian Blinds is simple. There are just two cords—one to raise and lower the slats—the other to tilt them. These cords govern all operations.

For blinds installed at ordinary size windows the slats are raised and lowered by means of pulleys. As the size of the blind becomes larger it is necessary to change the construction somewhat so that it will work as easily and efficiently as smaller sizes, despite its increased size and weight. These changes are made on Columbia Blinds in the following manner:

On Blinds up to 80 sq. ft. in Area: Pulley operation is used. (Illustration. See page 5.)

On Blinds from 40 to 160 sq. ft.: We recommend that blinds of this size be raised and lowered by means of a roller arrangement. (See detail on page 6.)

On Blinds over 160 sq. ft.: A mechanical lifting apparatus is recommended.

Installation

Blinds may be installed at any type window, skylight, transom, or glass door.

On the *Residential* and *De Luxe* brands, the blinds are hung at the window by means of two Columbia Patented Universal Brackets. (See page 4.) These brackets may be installed to wood, plaster, or metal. The blind easily slips into them, and a snap lock holds it in place. These brackets are for use either when the blind is installed inside the window casing, or on the face of it.

On the *Standard* brand, for installation on the inside of the window casing, the blind is held by screws through the head rail and attached to the top of the window frame. For installation on the face of the casing, 2½x2½ in. brackets are supplied. the head rail is screwed to the tops of the brackets, and the sides of the brackets are fastened to the face of the window casing or to the wall.

BUNDLE SPACE

De Luxe, Standard and Residential Blinds

Bundle space represents the space occupied by the blind when fully raised. The most satisfactory method of installing Venetian Blinds is to allow for a pocket above the window so that the blind is completely concealed when raised. The tables below give data for figuring size of pockets. Where it is not practical to construct pockets, the bundle space shows how high blinds should be hung above the opening, if installed on the casing, to clear the window entirely when raised. It will also show how much light will be cut off if the blind is hung between the jambs.

Type	Bundle space	Width of pocket
	De Luxe and Standard Blinds	
Pulley	3⅞ in. plus 1¼ in. for each foot in height of window opening	3½ in.
Roller No. 1 Blinds up to 40 sq. ft.	6¼ in. plus 1¼ in. for each foot in height of window opening	4½ in.
Roller No. 2 Blinds up to 80 sq. ft.	6¼ in. plus 1¼ in. for each foot in height of window opening	5 in.
Roller No. 3 Blinds up to 120 sq. ft.	7½ in. plus 1¼ in. for each foot in height of window opening	5¾ in.
Roller No. 4 Blinds over 120 sq. ft.	8¼ in. plus 1¼ in. for each foot in height of window opening	6½ in.
Mechanically operated Blinds up to 170 sq. ft.	7¾ in. plus 1¼ in. for each foot in height of window opening	6⅝ in.
Mechanically operated Blinds up to 225 sq. ft.	9¼ in. plus 1¼ in. for each foot in height of window opening	6⅝ in.
	Residential Blinds	
Pulley	2⅜ in. plus 1¾ in. for each foot in height of window opening	3 in.

SPECIFICATIONS FOR DE LUXE (PULLEY TYPE) VENETIAN BLINDS

Venetian Blind Specification for.....(name)
Building .....(address)

General—All Ventian Blinds called for in these specifications and shown on plans or drawings shall be manufactured by THE COLUMBIA MILLS, INC., 225 Fifth Avenue, New York, N. Y. Only first quality materials shall be used, assembled in a workmanlike manner throughout to conform with the following specifications:

Brand—Blinds to be furnished under these specifications shall be the Columbia "De Luxe" Pulley Type.

Operation—Blinds up to 80 sq. ft. shall be regular pulley type assembly end lift (front pull optional) raising cords, operating over double-race ball-bearing pulleys on steel shafts. Blinds less than 35 sq. ft. made single pull. Blinds 35 sq. ft. and over are made compound pull. (For openings from 40 sq. ft. to 160 sq. ft. Roller or Mechanical operation is recommended—see note.)

Head Rail—Shall be 2⅝ in. wide by 1⅛ in. thick, exposed edges to be thoroughly sanded and rounded. Cord and pulley routings to be clean cut allowing sufficient clearance for free action of cords and pulleys.

Tilt Rail—Shall be clear well-seasoned Port Orford Cedar 2½ in. wide by $\frac{13}{16}$ in. thick with exposed edges rounded and Cord slots shall be clean cut 1⅛ in. long by $\frac{7}{16}$ in. wide.

Slats—Shall be of uniform size 2⅜ in. wide and ⅛ in. thick, made of clear Port Orford White Cedar, free from pin knots, machine marks, etc. Cord slots shall be clean cut, without fractured edges, not over ¼ in. wide slot. Ends and cord mortises shall be thoroughly finished with lacquer.

Bottom Rails—(Blinds less than 35 sq. ft.) Shall be clear Port Orford White Cedar 2½ in. wide by $\frac{13}{16}$ in. thick, edges thoroughly sanded and rounded. Recesses to be provided for knotting of lift cords.

Bottom Rails—(Blinds 35 sq. ft. and over.) Shall be clear Port Orford White Cedar 2⅝ in. wide by 1⅛ in. thick. Under side to be recessed for cords and ball-bearing pulleys.

Hardware—All hardware to be steel electro copper- or nickel-plated. Solid bronze at extra charge. (Can be finished same color as blind at extra charge.)

Brackets—All blinds shall be hung on Columbia Universal Patented snap-lock brackets, to enable removal of blinds for cleaning, etc.

Tilt-Lock—All blinds shall be equipped with Columbia Worm Gear tilt device allowing at least eleven adjustments of slats and insuring smooth and quiet operation of blind by use of tilt cords.

Center Supports—Blinds over 43 in. in width shall be equipped with heavy copper- or nickel-plated steel center supports to eliminate possibility of sagging or warping. To be of a design to allow full angle of tilt in either direction without interfering with slats.

Finish—All head rails, tilt rails, slats and bottom bars including end and cord slots shall be finished with pyroxylin base lacquer, to produce a semi-gloss velvet finish. Color to be selected from Columbia color line. (Special colors and finishes can be furnished.)

Tapes—Shall be first quality with cross straps interwoven, free from defects in warp, woof or weaving. Tapes shall be spaced not less than 4½ in. or over 7 in. from ends of slats, intermediate tapes spaced not more than 28 in. on centers.

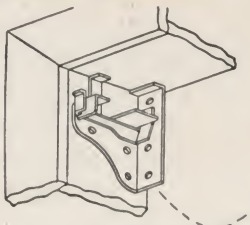
Cords—All cords shall be first quality No. 4½ braided cord and glazed to minimize wear. They shall be of sufficient length to properly control the tilting and raising of the blind from the floor.

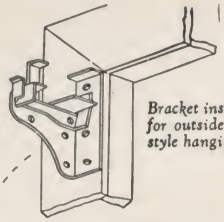
Installation—To be made in a thoroughly workmanlike manner in accordance with manufacturer's standards and to be subject to inspection and approval of manufacturer's and architect's representative.

Note: Specifications for the roller and mechanically operated blinds, and for the Columbia Standard and Residential Brands may be had upon request.

Universal Brackets. Brackets may be attached either inside or outside of casing. Head rail of the blind slips into brackets and locks itself there. Instantly removable by finger pressure on retaining guard.

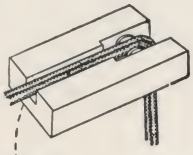
Bracket installed for inside "A" and "B" style hanging.

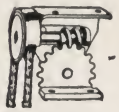




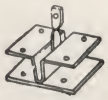
Bracket installed for outside "C" style hanging.

Pulleys. Free action pulleys insure easy raising and lowering of the blinds.





Worm Gear Tilt Device. Tilts slats to any desired angle and holds them securely in place.



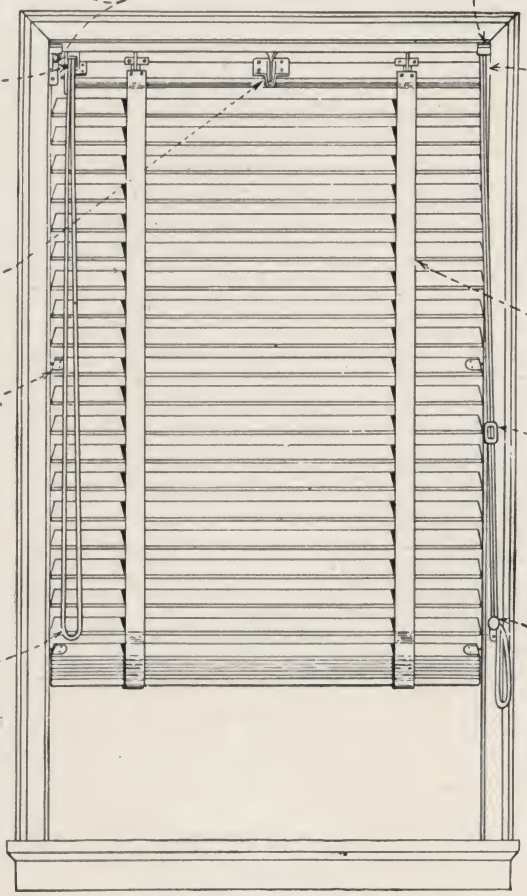
Anti-Sag Center Support. Used on the wider Columbia Blinds to eliminate all possibility of sagging or warping. Gives extra support at center of head rail without interfering with tilting of slats.



Slider Guides. An optional feature to prevent billowing or swaying of blind in the wind.



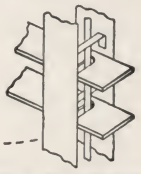
Tilting Cord. Easy to grip. Lifting and tilting cords are of *Columbia* glazed hollow tube cord.



DE LUXE



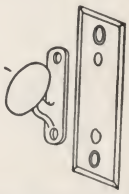
Tilt Rail End Clip. Reinforces the end of tilt rail against splitting, and holds gudgeon always firmly in place at pivotal center of tilt rail.



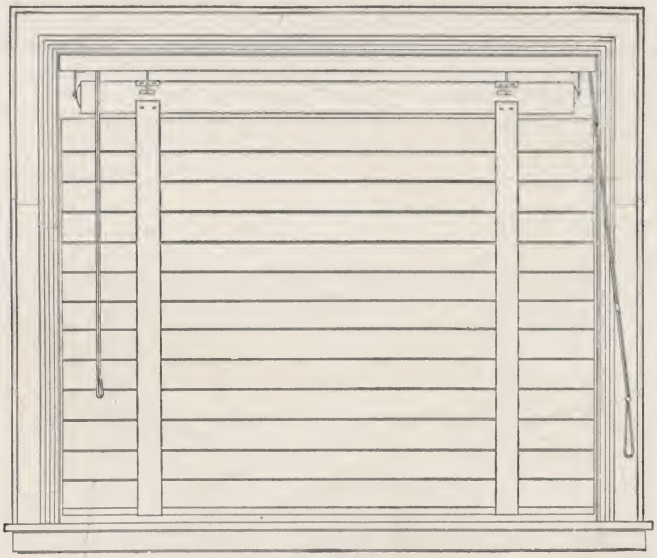
Imported Tape. Specially woven tape. Cross tabs are woven directly into vertical tapes.



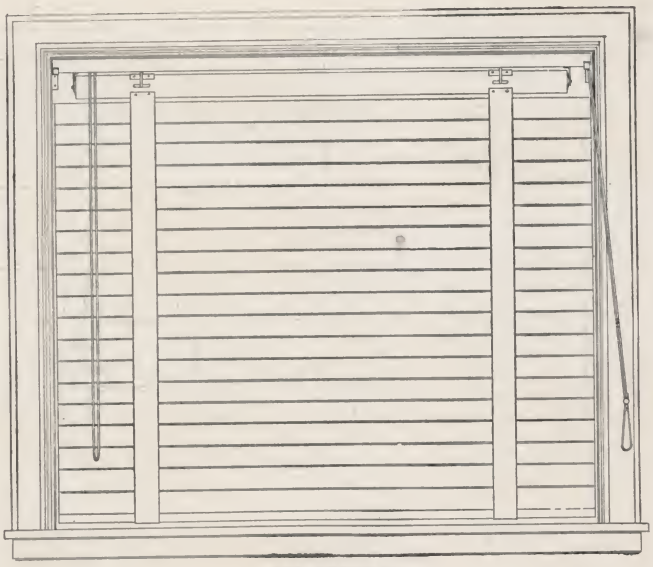
Equalizer. This simple device keeps lifting cords uniform and insures even raising and lowering of the blind.



Cord Holder. Holds blinds securely in any position. Adapter plate finished to match color of the blind is furnished where necessary.

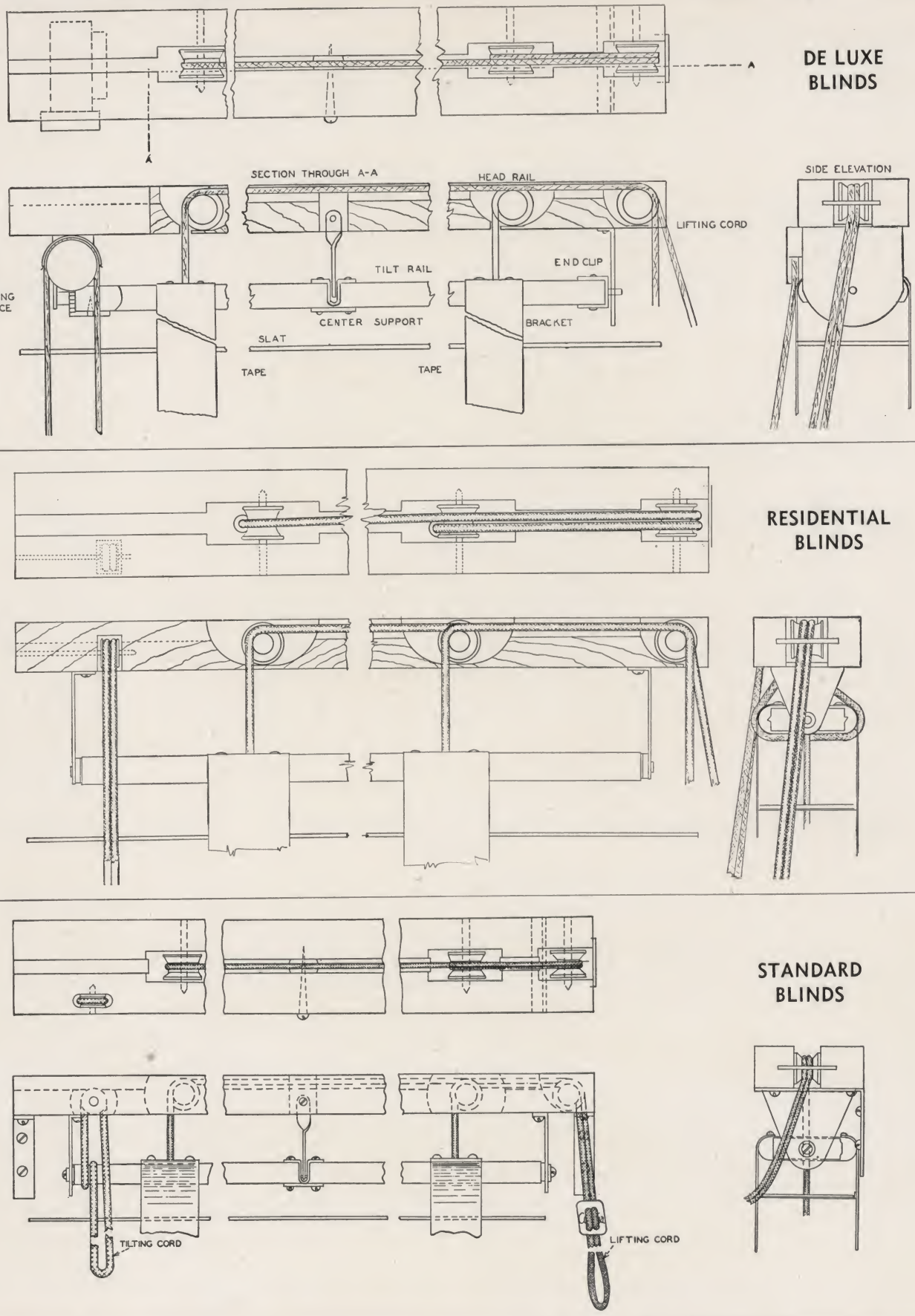


STANDARD



RESIDENTIAL

DETAILS OF COLUMBIA PULLEY OPERATED VENETIAN BLINDS

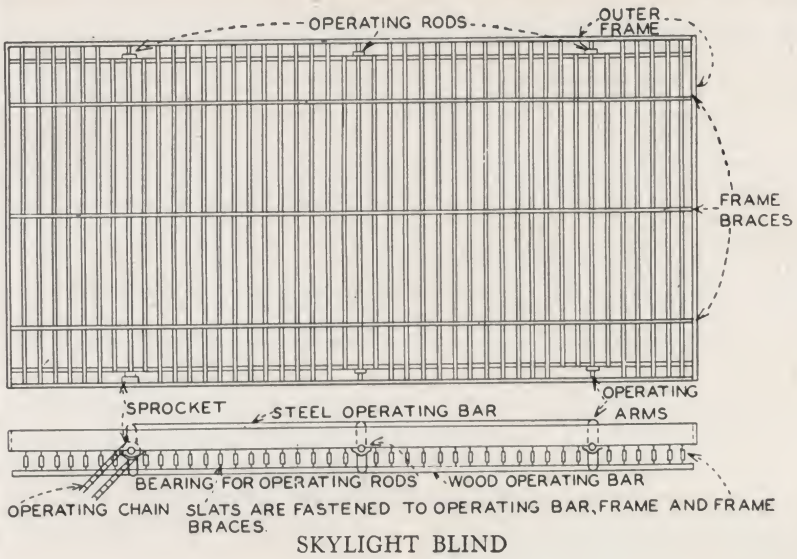


DE LUXE BLINDS

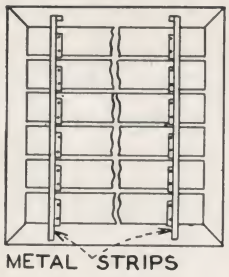
RESIDENTIAL BLINDS

STANDARD BLINDS

DETAILS OF PULLEY OPERATION—COLUMBIA VENETIAN BLINDS

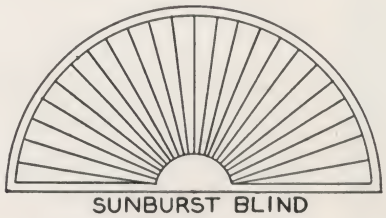


SKYLIGHT BLIND

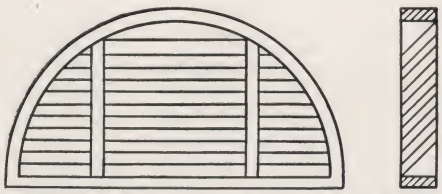


TRANSOM BLIND

ARMS PROJECTING FROM METAL STRIPS ON 45° ANGLE AND FASTENED WITH RIVETS.



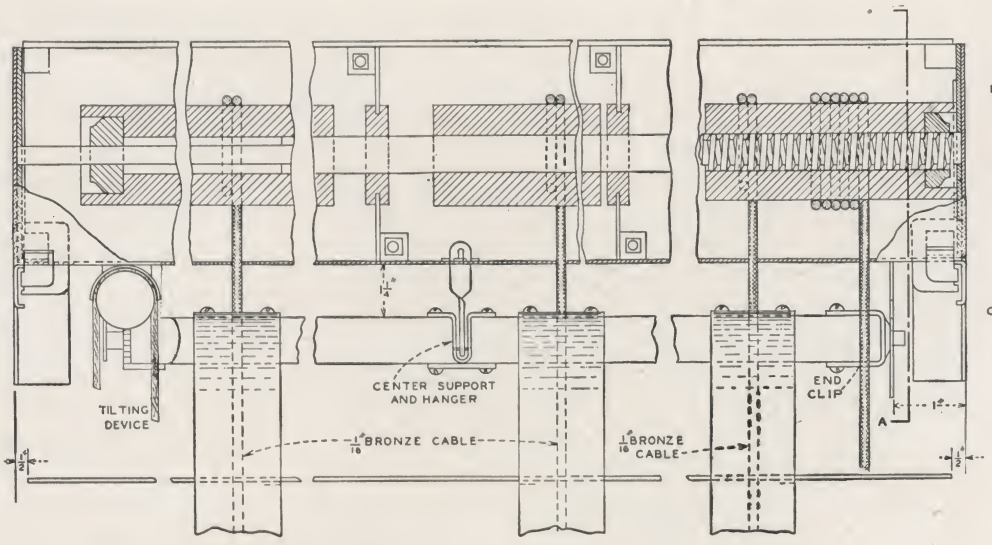
SUNBURST BLIND



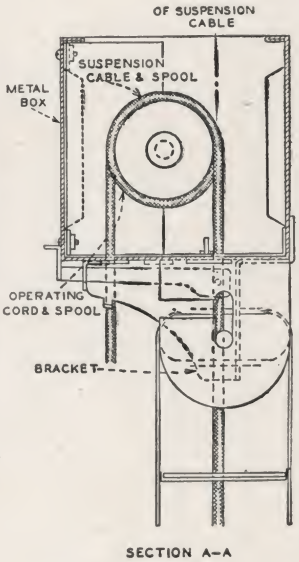
CIRCLE TOP WITH HORIZONTAL SLATS

SPECIAL TYPES OF COLUMBIA VENETIAN BLINDS

Roller Lift Operation is recommended for raising and lowering the slats of blinds the area of which is over 40 sq. ft.



ROLLER TYPE BLIND



SECTION A–A

ROLLER LIFT OPERATION FOR COLUMBIA VENETIAN BLINDS

KANE MANUFACTURING COMPANY

Manufacturers of Venetian and Skylight Blinds for Interior and Exterior Use

MAIN OFFICE AND FACTORY

KANE, PA.

SALES OFFICES AND DISTRIBUTORS IN ALL PRINCIPAL CITIES

For our pages on Wood and Metal Frame and Roll Screens, see Manufacturers' Index

"KANE QUALITY" VENETIAN BLINDS

Standard Lift, Double Lift, Circle, Oval or Segment Head, Traverse Roller, Skylight and Exterior

Patents

All special features incorporated in the design of the above blinds are covered by patents and patent applications.

Adaptability

"Kane Quality" Venetian Blinds are adaptable to all kinds of windows, sun porches, skylights, or other openings in residences, offices, hotels, schools and public buildings where complete control of light and ventilation is desired. By proper tilting of the slats, direct sun rays are diffused and reflected into soft mellow light. Perfect control of ventilation is obtained as air currents are deflected and broken up, giving positive circulation without direct drafts, at open windows. Utmost privacy is assured, as they permit occupants seeing out without being seen from the outside.

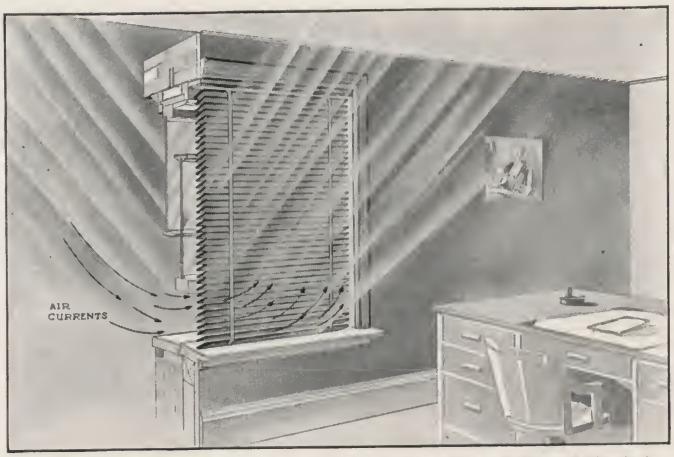
Roller cloth shades or awnings are not necessary with "Kane Quality" Venetian Blinds. Venetian blinds are economical as they outlast several sets of shades and awnings and eliminate costly replacements and repairs.



A Typical Office Installation

Operation

"Kane Quality" Venetian Blinds are easily raised and lowered and are secured at any desired elevation by a turn of the lifting cord around the horned hook secured to window trim. Slats may be tilted to any desired angle by the operating cord and are held firmly in position by a positive tilting bar operator. The operating cord is regularly placed at the right-hand side of the blind, but may be reversed, if necessary. Front tilting bar operator is standard, but end tilting bar operator may be supplied as required. End lift is regularly supplied for raising or lowering the blinds, but front lift may also be furnished.



Positive and Convenient Control of Light and Ventilation Afforded Through Tilting Slats

Slats may be adjusted in a wide range of positions. Harsh, bright light rays are reflected and diffused in soft, mellow light. Drafts are retarded and turned upward

Installation

"Kane Quality" Venetian Blinds are custom-made to individual order and are supplied completely finished, with all necessary fixtures for hanging.

Installations are easily and quickly made by our experienced workmen. A complete range of brackets may be supplied to meet any condition.

Materials

The slats are 2⅜ in. wide and ⅛ in. thick for general use; 2-in. slats may be furnished when ordered, for medium and small openings. Unless otherwise required, we use genuine Port Orford cedar or basswood—both are light in weight, very serviceable, do not warp, split or check easily, have a closely knit, even grain, finish smoothly and present an ideal surface for any finish.

The fabric ladder tapes with interwoven cross strips supporting the slats and the hollow braided glazed cords are of best imported or domestic grade.

All materials entering into the manufacture of "Kane Quality" Venetian Blinds are of highest quality selected as best suited for the purpose.

Hardware is of special design and of our own manufacture.

Colors

"Kane Quality" Venetian Blinds are finished in three standard colors, Ivory, Light Green or Light Gray. Any other color, stain or natural wood with varnish finish can be supplied at slight extra cost.

The standard color for fabric tapes and cords is drab. Other colors may be supplied to harmonize or contrast with the slats, at a slight additional cost. Any special color may be supplied as we can dye tapes and cords to conform to any color treatment.

"KANE QUALITY" VENETIAN BLIND TYPES

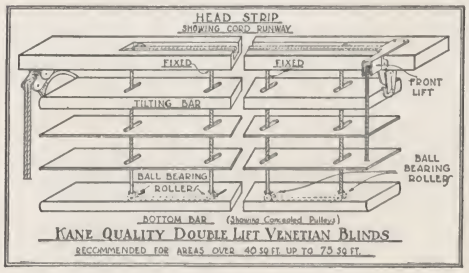
Type "A" Blinds—Are standard free hanging and are usually installed in residences, apartments, hotels, clubs and fixed windows.

This type gives perfect control of light rays and ventilation and materially lowers room temperature in warm weather. Sill brackets are recommended for holding the blind securely and quietly to the sill.

Type "C" Blinds—Type "C" blinds are recommended for offices, institutions, hospitals, sun porches, residences and public buildings, on windows which are frequently opened for ventilation. Slats are held securely by noiseless, oil treated sliding wood shoes held in tension by concealed springs operating in brass channel guides. Guide slats occur every 20 in., and are 2⅜ in. wide by $\frac{5}{16}$ in. thick, with double beveled edge.

Single and Double Lift Types "A" and "C" Blinds—Both Types "A" and "C" blinds are made in single and double lift construction. Single lift up to 40 sq. ft. in area; double lift over 40 and up to 100 sq. ft. The pull exerted for single lift blinds is one-half pound per square foot. Double lift blinds operate on block and tackle principle, and pull exerted is only half the weight or one-quarter pound per square foot. Ball bearing steel rollers are placed in the bottom bars over which cord runs.

Traverse Roller Blinds—Recommended for extremely large openings, as in banks, auditoriums, public buildings, etc., with amazing ease of operation on sizes from 75 to 125 sq. ft. Traverse roller blinds can be supplied with wood facia or metal box covering for completely concealing the roller mechanism.

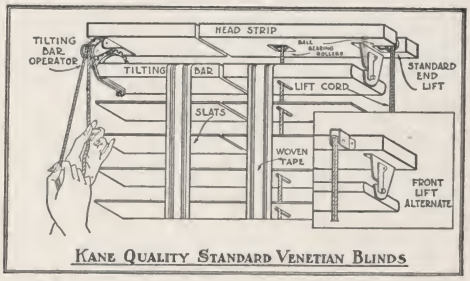


KANE QUALITY DOUBLE LIFT VENETIAN BLINDS
RECOMMENDED FOR AREAS OVER 40 SQ FT. UP TO 75 SQ FT.

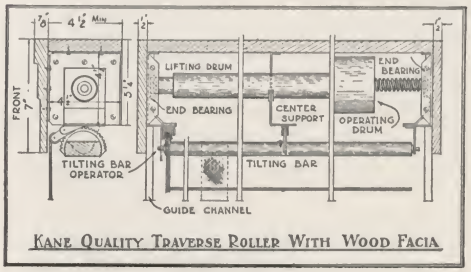
Circle Head Blinds—Circle head blinds for oval, semicircular or segment top openings may have stationary or radial slats set at 45° angle in frames which may be hinged, secured to sash or transom bar or attached to blind below.

Skylight Blinds—Are installed in light wells and skylights in offices, industrial plants and mercantile establishments; either pole or hand operation through draw cords.

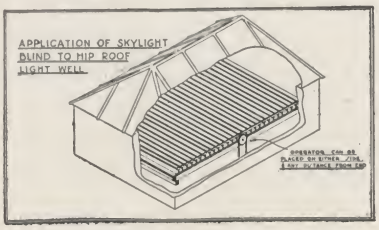
Details—Complete details and specifications are available on request on all types of blinds.

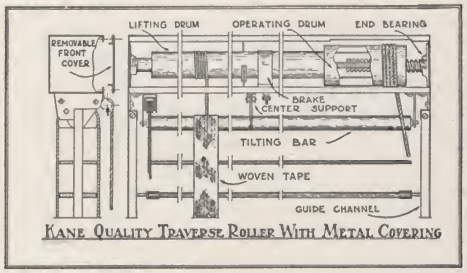


KANE QUALITY STANDARD VENETIAN BLINDS

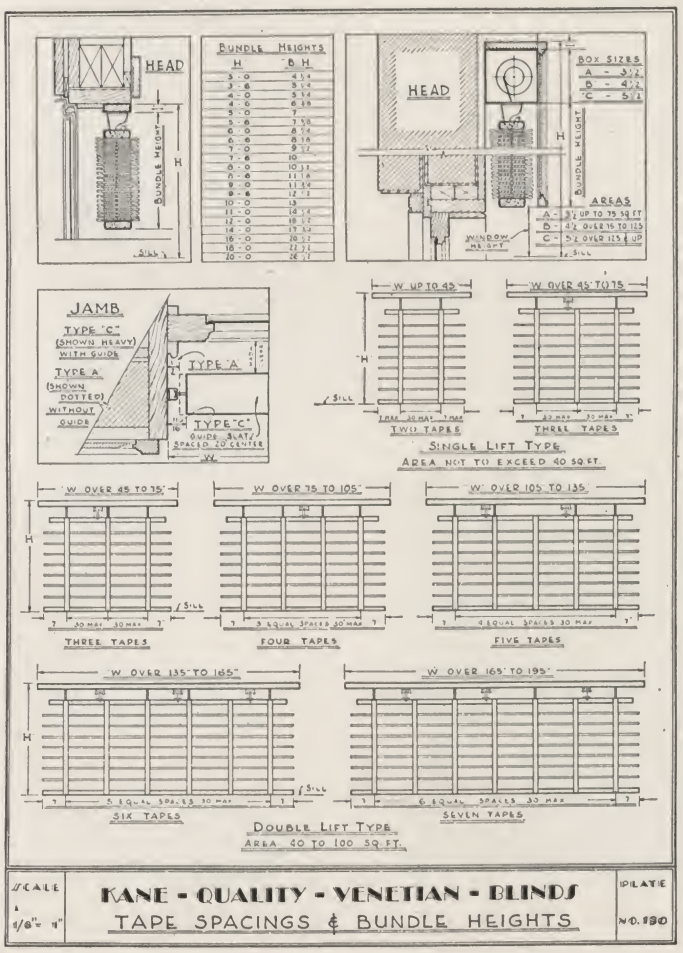


KANE QUALITY TRAVERSE ROLLER WITH WOOD FACIA

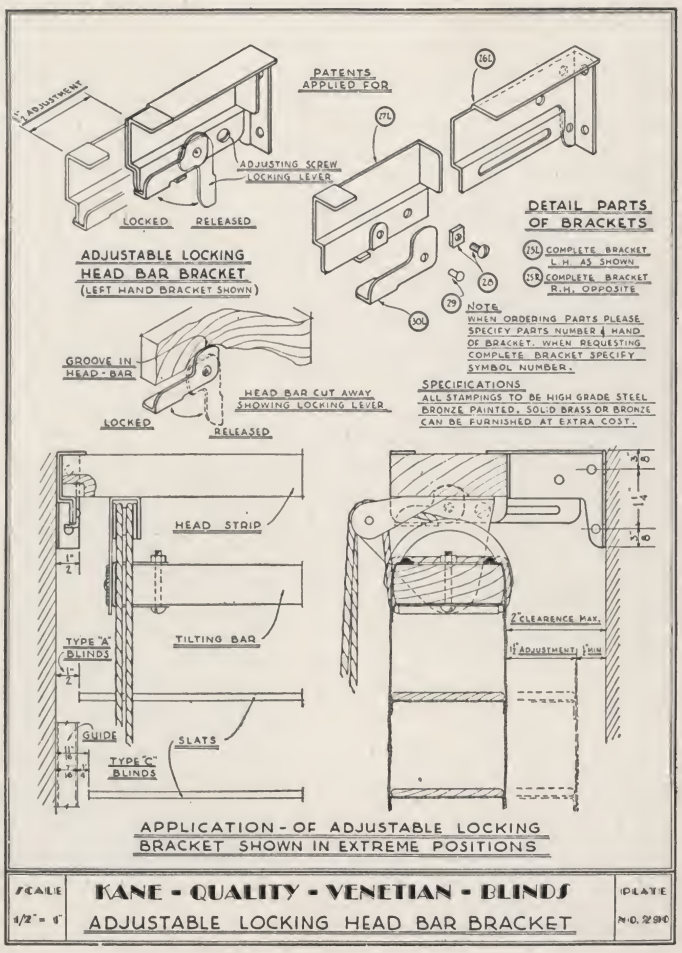




KANE QUALITY TRAVERSE ROLLER WITH METAL COVERING



SCALE 1/8" = 1"	KANE - QUALITY - VENETIAN - BLINDS TAPE SPACINGS & BUNDLE HEIGHTS	PLATE NO. 290



APPLICATION - OF ADJUSTABLE LOCKING BRACKET SHOWN IN EXTREME POSITIONS

SCALE 1/2" = 1"	KANE - QUALITY - VENETIAN - BLINDS ADJUSTABLE LOCKING HEAD BAR BRACKET	PLATE NO. 290

SIMON VENTILIGHTER CO., INC.

(ALSO KNOWN AS VENTILIGHTER CO.)

Ventilating Vane Systems for Skylights, Windows and Sleeping Porches

101 Park Avenue, NEW YORK, N. Y.

Product and Service

VENTILIGHTER, a scientific light controlling device adapted to skylights, windows and sleeping porches, and encompassing within its uses the complete control of light in all its phases.

We shall be pleased to consult with you concerning special requirements.

Estimates and Installation

In writing for information, please submit a sketch illustrating conditions. For skylight Ventilighters show construction of skylight opening and possible obstructions such as columns, piping, etc. For window Ventilighters show section of jamb, head and sill.

We furnish blue prints showing a simple method of installation. Our staff, if desired, will undertake complete installation. Catalogue upon request.

Principle of Ventilighter

Ventilighter consists of a series of specially woven fabric vanes, mounted in a metal lattice framework, although metal or other material may be substituted in special instances. The vanes may be opened or closed so as to overlap, ventilation remaining unimpaired, excepting where the all-metal skylight Ventilighter described below is used for complete darkening. The use of various types of vanes corresponding to the individual problem, permits the concentration, diffusion or elimination of light rays.

Fabric Skylight Ventilighters

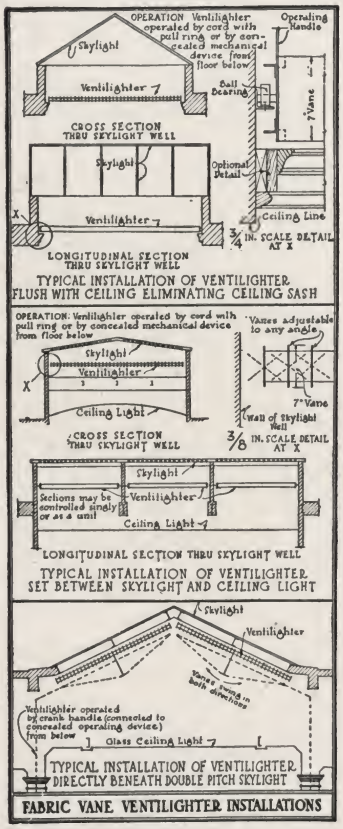
Ventilighter for skylights is a special louvre construction as illustrated, with the louvres or vanes adjustable within the area covered, so that they overlap or open wide at will. When fabric is used the heat of the sun is tempered and a soft diffused light results, which can be controlled in the desired direction.

Glare and shadows are absolutely eliminated. When the vanes are completely closed they overlap but do not touch, hence ventilation is unimpaired. *To emphasize again, light is perfectly controlled, heat reduced, glare eliminated, and ventilation unimpaired.*

All-metal Skylight Ventilighters (Darkening)

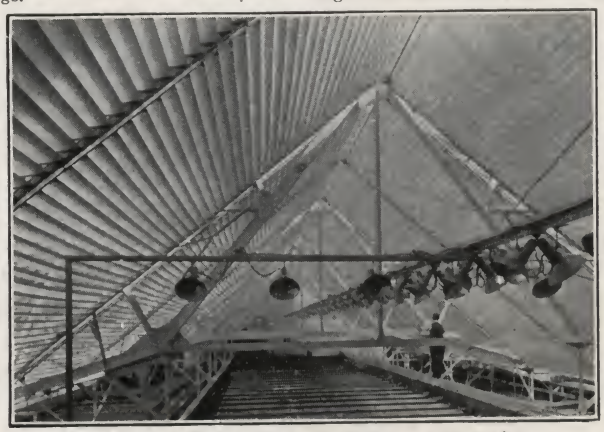
A most important phase of our work is the use of metal vanes flanged at the edges so that when the louvres are closed they overlap and darkness is instantly effected. Ofttimes *skylights in auditoriums must be darkened* when motion pictures are shown and the value of causing instant darkness by merely pulling a cord or turning a crank is apparent.

Reversing the above, very often the vanes are made similar in design but enameled white. Thus the vanes when closed act as a big reflector to the artificial lights, creating an *ideal indirect lighting system,* yet when daylight is strong enough to be used, the vanes are opened at the proper angle to reflect natural light to the proper location. Ventilighters may be operated from predetermined points of convenience when proper provision is made; electrically also if desired.



Window Darkening Ventilighters

We also manufacture a special sliding sheet steel device electrically or manually controlled for darkening purposes, so devised that a battery of windows may be darkened at one time, such as proves necessary in auditorium work. When not in use the plates collapse into a pocket out of sight and at the press of a button or the turn of a crank reappear and extend so as to completely cover the openings.



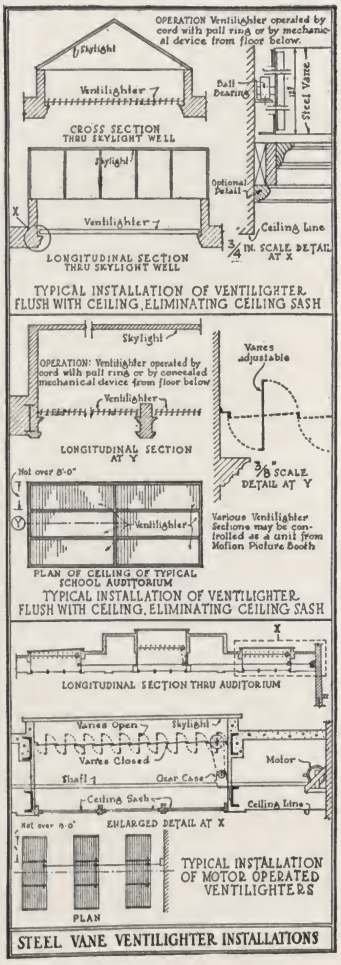
View Above Ceiling Sash of Gallery of Fine Arts, Yale University, New Haven, Conn.

EGERTON SWARTWOUT, Architect FRENCH & HUBBARD, Engrs.

Window and Sleeping Porch Ventilighters

Ventilighters for windows and sleeping porches consist of a series of specially woven horizontal fabric strips or vanes mounted in a framework and so devised that the vanes may be tilted up or down without impairing ventilation. For windows we have standardized on a gold colored fabric designed to eliminate the heat and glare of the sun without loss of light. For sleeping porches we have standardized on a cravenetted opaque green material which is impervious to snow or rain and withstands the strongest winds.

Window and sleeping porch Ventilighters collapse to the side jamb (occupying ¾-in. space to the running foot) by pulling a cord. The entire construction is rattle-proof, easily controlled on the largest windows, and by virtue of folding to the side takes away no light.



Some Buildings Where Ventilighters Are Installed

BUILDING AND LOCATION	ARCHITECT
Fogg Art Museum, Harvard University	Coolidge, Shepley, Bulfinch & Abbott (French & Hubbard, Eng'rs)
Guaranty Trust Co., New York	Cross & Cross
New York Public Library, New York	Carrere & Hastings
Detroit Institute of Arts, Detroit	Paul P. Cret and Zantzinger, Borie & Medary
Auditorium Bldg., Cal. Inst. of Tech., Pasadena	Bertram G. Goodhue
Annex, Pierpont Morgan Library, New York	Benj. W. Morris
Conn. Mutual Life Ins. Co., Hartford, Conn.	Benj. W. Morris
Art Gallery, University of Rochester	McKim, Mead & White
L. Cass Ledyard Jr. Residence, Syosset, N. Y.	Chas. A. Platt
Lyman Allyn Museum, New London, Conn.	Chas. A. Platt
Sterling Library, Yale University	Jas. Gamble Rogers
New Haven Savings Bank, New Haven	Egerton Swartwout
Hall of Geography, Harvard University	Horace Trumbauer
Savings Bank of Newport, R. I.	Thos. M. James
Free Library of Philadelphia	Horace Trumbauer
Museum of Natural History, New York	Trowbridge & Livingston
Mitsui Bank, Tokio, Japan	Trowbridge & Livingston
Chemical Laboratory, Princeton University	Day & Klauder
Schools, Wilmington, South Orange, etc.	Guilbert & Betelle
Packard Memorial, Lehigh University	Visscher & Burley
First National Bank of Hawaii, Honolulu	York & Sawyer
New York State Office Bldg., Albany	Wm. E. Haugaard
Mellon National Bank, Pittsburgh	Trowbridge & Livingston
Essex County Courthouse, Newark	Guilbert & Betelle
Providence Institution for Savings, Providence	Howe & Church
Providence County Courthouse, Providence	Jackson, Robertson, Adams
Centerville National Bank, Arctic, R. I.	Hutchins & French
Col. H. H. Rogers Residence, Southampton	John Russell Pope
D. A. R. Building, Washington, D. C.	John Russell Pope
U. S. Depart. of Commerce Bldg., Washington	York & Sawyer
Government Museum, Quebec, Canada	Wilfrid Le Croix
Union Trust Co., Baltimore, Md.	Smith & May
Hon. Alfred E. Smith Apartment, New York	
Westchester County Park Com., Bronxville, N. Y.	
Long Island State Park Com., Babylon, L. I.	

ESTABLISHED 1856

SWEDISH VENETIAN BLIND COMPANY

Manufacturers and Distributors of Swedish Venetian Blinds

OFFICE AND FACTORY
601 West 26th Street
NEW YORK, N. Y.

TELEPHONE
LAckawanna 4-8437

CABLE ADDRESS
"Venetblind"

For Our Page on Partitions, Rolling Doors and Shutters, see Manufacturers' Index

SWEDISH VENETIAN BLINDS

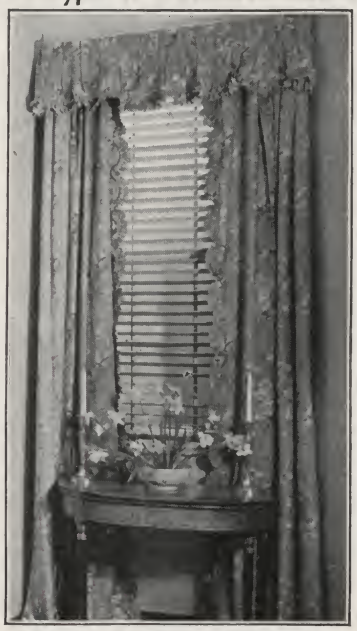
For All Sizes and Types of Windows—Interior and Exterior

Swedish Venetian Blinds are as satisfactory and durable a blind as there is on the market. They are made of the highest grade material—Port Orford Cedar, thoroughly kiln dried, the best imported interwoven tape, good quality cord, and neat brackets and hardware for hanging. Either wood fibre rollers, brass pulleys or ball-bearing pulleys to prevent cord from wearing, are used.

The experience of years of practical service has developed different systems of operation according to the individual job—guaranteed to give perfect service and easy control in all installations.

Blinds can be adjusted to any angle by a patented regulating device, and can be put up and taken down as easily as a roller shade, requiring no tools. Side atachmens such as brass rods or heavy wire, or metal guides with attachments on intermediate slats are recommended for blinds attached to doors or swinging transoms and wherever exposed to a strong wind.

Installation is very easy. All necessary materials are furnished.



Beauty—Durability—Efficiency

Used Wherever Perfect Shading and Ventilation Are Desired

Swedish Venetian Blinds are used in private residences, sun porches, libraries, offices, hotels—in face any place where the most satisfactory distribution of light, perfect ventilation and excellence of appearance are desired.

Furnished for outside or inside purpose, with or without guides.

Also made with extensions, taking the place of awnings.

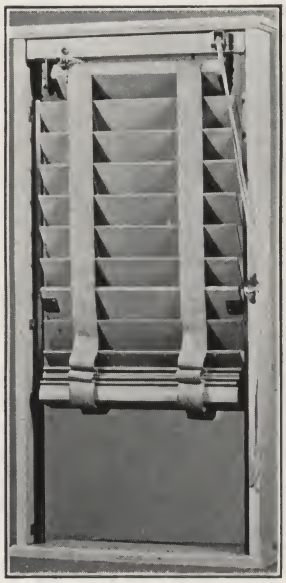
They answer the purpose of shutter to a certain degree when let down.



Channel guides for inside blinds



⅜-in. rod guides for inside or outside



Sliding Venetian Blind in Brass Grooves with Brass Attachments on Heavy Slats



Traverse Roller Type

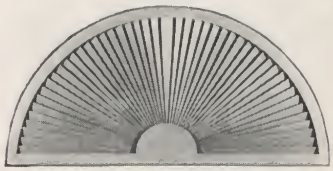
All blinds containing over 100 sq. ft. area shall be mounted with the traverse roller shown above. This roller maintains the slats in position exactly parallel to the window sill at all times. As it turns it travels from side to side and all the cords wind and unwind evenly

Side Guides

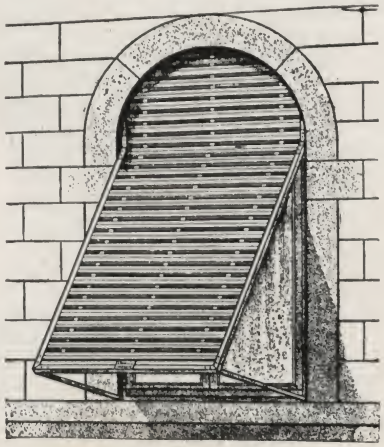
To prevent blind from swaying in the wind Blinds are sometimes equipped with side guides. They may be placed between jambs or on the face of casing. Brass clips and rings secured to ends of double-thick slat and bottom rail at intervals of about 2 or 2½ ft., depending upon height of blind



Arch Blind

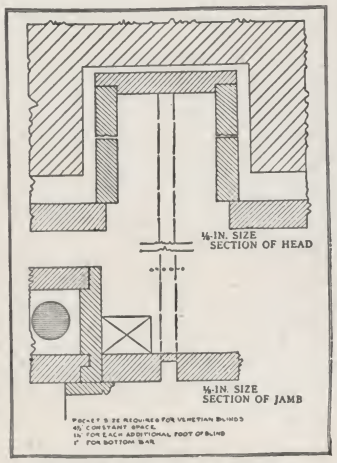


Sunburst Blind



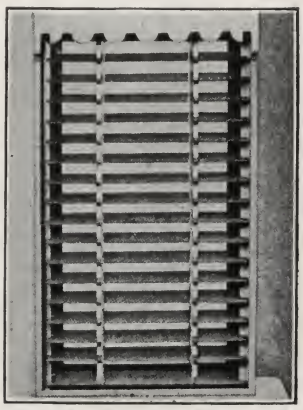
Outside Roller Blind

Made of heavy wood slats (Swedish Pine) connected with non-rustable metal connectors. The slats slide in a neat metal groove. Slats can be adjusted so as to give ventilation and privacy, with only one tape operation inside. Rolls completely out of the way up into a pocket on the inside



Detail of Jamb and Pocket

When above is followed, it will result in a most satisfactory installation of Venetian blind, either outside, between screen and sash, or on the inside, giving a better service than any other blind of its kind



Outside Venetian Blind with Metal Tape

Made of materials and so constructed that it will give long and satisfactory service; there is nothing that will wear out or go out of order. Equipped with rod guides. A metal hoisting tape and metal chain of non-rustable material are used; will not wear out and will withstand any atmospheric conditions, making this blind practically indestructible, and a very low cost blind installation

WARREN SHADE COMPANY

Manufacturers of Venetian Blinds–Wood Fabric Porch and Industrial Shades
2905 East Hennepin Avenue, MINNEAPOLIS, MINN.
REPRESENTATIVES IN PRINCIPAL CITIES

WARREN'S VENETIAN BLINDS

Adaptability

Venetian blinds are suitable for use in banks, office buildings, hotels, public buildings, residences, sleeping porches and solariums. The use of roller shades and awnings is not necessary when Warren's Venetian Blinds are installed, for they provide perfect control of light and ventilation. By properly tilting the blind slats, all direct sun rays are excluded, flooding the room with an abundance of soft, diffused light; while, at the same time, the air currents may pass between the slats where they are deflected upward, eliminating any direct drafts.

Operation

Warren's Venetian Blinds are supplied with suitable operating devices to insure all blinds operating easily with a minimum of wear and attention. The blinds can be completely raised or lowered or can be secured at any height by a turn of the lift cord around the horned hook placed on the window trim. The slats may be tilted to any desired angle by a slight pull on the tilting cord which is generally placed at the left end of the blind. The slats are held at any desired angle by the use of a worm gear tilt lock. This form of lock is far superior to the old style friction devices in that it is much easier to operate and it is impossible for slats to open up when tilted.

Installation

Warren's patented installation brackets simplify erection. No screws are necessary to hold the blind in position and it may be installed or taken down as easily as a roller shade.

Warren's Venetian Blinds are made to fit the individual window and are shipped completely assembled ready to install.

Service

We welcome inquiry from architects and owners. Complete data and sample blinds will be sent them upon request.

Materials

Wooden Parts—All wooden parts are of clear white basswood. This wood is free from pitch and sap, light in weight, and does not cup or twist. Slats are ⅛x2⅜ in.; top and bottom rails, ⅛x2⅜ in.; head members, 1⅛x2⅜ in.

Ladder Tape—We use only best quality interwoven cotton tapes. Tape is eyeleted with brass eyelets and secured to the rails with brass screws to allow for easy dismantling.

Cords—All cords are of the best grade of tubular woven glazed cord. The tubular weave eliminates twisting and snarling; the glazing prolongs the life of the cord.

Hardware—All parts, except horn hook, are of heavy gauge auto body steel, brass plated and lacquered to resist rust.

Pulleys—All pulleys are ½x⅞ in. steel, double race ball bearing type and mounted on ⅛-in. shafts.

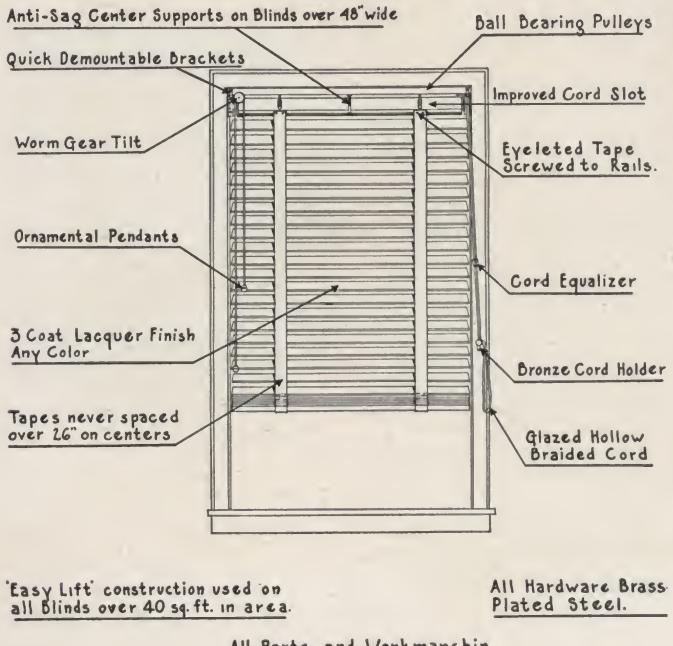
Worm Gear Tilt—All blinds are provided with a positive action worm gear tilting device guaranteed to hold the slats at any angle in all sized blinds. It is of extremely simple construction and guaranteed for the life of the blind. Tilting cords are finished off with ornamental pendants.

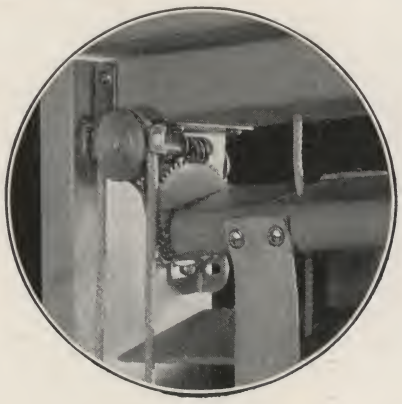
Anti-sag Center Support—All blinds over 48 in. in width are provided with center supports to insure against any sag in the tilting rails.

Side Guides—When desired, blinds can be furnished with a special channel side guide. Pins attached to each end of every sixth slat engage into a ⅜x⅜-in. brass guide channel.

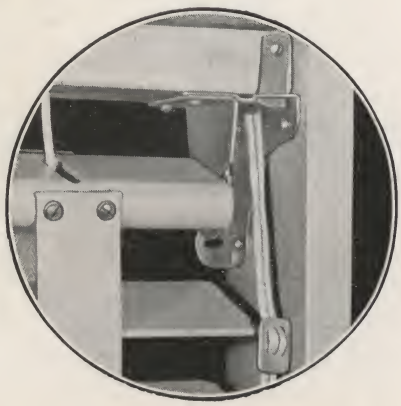
Finish—All wooden parts are given a special lacquer finish which is extremely durable. They can be had in a wide range of standard colors or finished to match sample submitted. Ladder tapes and cords can be dyed to match the slats.

WARREN VENETIAN BLINDS COMBINE ALL OF THESE IMPROVEMENTS





Slight pull on either cord will tilt slats to any desired angle. A decided improvement over friction devices in general use.



Lift latch (patented) at end of blind and entire blind is quickly removable from brackets without removing any screws.

WESTERN
VENETIAN BLINDS



WESTERN VENETIAN BLIND COMPANY • NEW YORK • LOS ANGELES

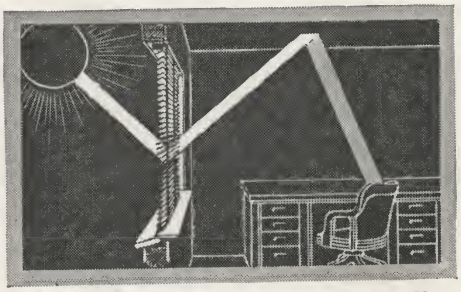


The need of controlled daylight in an office! Spots indicated as 1, 2, 3 and 4 show eye-destroying variations in light intensities, such as glare, a darkened ceiling, "twilight zones," light streaks on floors, walls and desks. Pulling down the common roller shade would uselessly block off a portion of the window area and increase variations in light intensities.

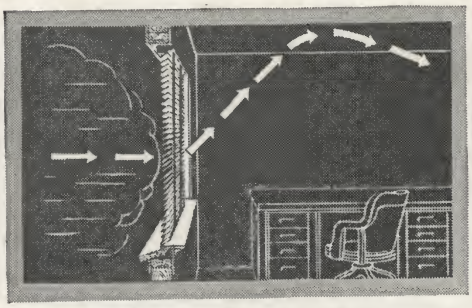


An ideal lighting condition using Western Venetian Blinds! Controlled, diffused, even daylighting on all desk surfaces like the lighting in nature's outdoors—a light ceiling reflecting eye-comforting rays to all corners of the room. All light from the total window area is being used and redistributed evenly throughout the room.

here is- ① controlled daylight! ② regulated ventilation!



How a Ray of Light Travels via Western Venetian Blinds. Each ray of bright sunshine is reflected to the ceiling and diffused into soft, restful, even daylight, thus eliminating eye-destroying glare.



How an Air Current Travels via Western Venetian Blinds. Air currents are diverted upward by the adjustable slats, thus providing a free circulation of fresh air, yet eliminating draft.

WESTERN Venetian Blinds render a twofold service. First, they control to a precise degree the distribution of natural daylight in any room; second, they regulate ventilation surely and positively.

The acceptance and endorsement of Western Venetian Blinds by architects the world over demonstrates that they have fulfilled the need that has long existed for a window equipment which would perform a scientific service, yet, at the same time, be in keeping with the latest architectural development and treatment.

There is no need of auxiliary equipment when Western Venetian Blinds are specified. They are economical, practical, convenient, dignified and perform a service enthusiastically endorsed by architects, contractors, builders, tenants, owners and managers.

Let our photometric test convince you!

WE have devised a simple, yet highly scientific test called the "Photometric Test." The instrument used in this test is a photometer—a scientific instrument which registers the daylight intensities on desks, ceilings, walls, floors—in fact anywhere it is placed. It calibrates foot-candles of light on a dial. These foot-candle readings are then transcribed to countour sheets, telling you instantly which sections of a room are being underlighted, overlighted or which sections are receiving adequate foot-candles of light.

Our illumination experts are ready to make this test, suggest colors of walls, size of windows for various floor areas and orientation of windows, for most effective daylight illumination.

Research work done in the field of daylighting by the WESTERN VENETIAN BLIND COMPANY is available to architects in brochure form.



This photometric test is free to any architect who wishes to learn the truth about daylight illumination in any project under contemplation or construction.

WESTERN VENETIAN BLIND COMPANY

101 Park Avenue
NEW YORK, N. Y.

2700 Long Beach Ave.
LOS ANGELES, CALIF.

Eastern Plant: BROOKLYN • LOS ANGELES: Western Plant

• FOR SALES REPRESENTATIVES IN PRINCIPAL CITIES, SEE BACK OF COVER •



Where there are windows ...now there can be



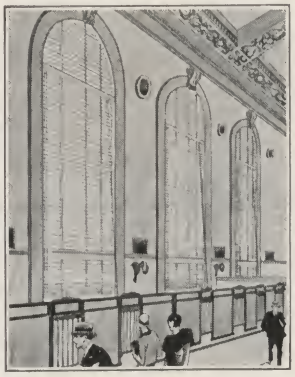
IN THE HOME



IN THE OFFICE



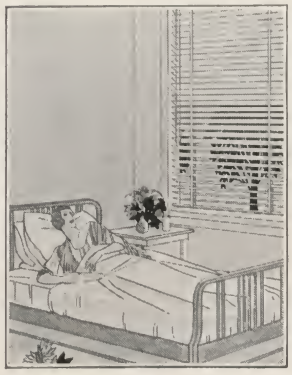
IN LIBRARIES



IN BANKS



IN SCHOOLS



IN HOSPITALS

DAYLIGHT . . . WITHOUT GLARE

Western Venetian Blinds permit an even diffusion of light all over the room. Thus, glare, streaked patterns, "twilight zones," dark corners and shadows are eliminated, protecting the eyesight of the occupants of the room.

VENTILATION . . . WITHOUT DRAFT

Western Venetian Blinds regulate ventilation by deflecting air currents upward. This eliminates drafts without sacrificing fresh air or necessary light. An obvious aid to health, especially in nurseries, bedrooms, schools and hospitals.

TEMPERATURE CONTROL

Western Venetian Blinds aid in regulating temperature. They shut out heat by deflecting the direct rays of the sun as they enter the room. In winter they keep the room warmth from escaping, the wood slats being an excellent non-conductor of heat. Yet, at all times they permit adequate ventilation.

ARCHITECTURAL HARMONY

Western Venetian Blinds are now being supplied in a variety of colorful hues, in wood parts, tapes and cords. The present vogue for color suggests a score of new uses to architects, contractors and interior decorators. Western Venetian Blinds in color bring out the true tone values of your decorative plan. The foremost decorators of the country are installing Western Venetian Blinds in many of America's finest homes.

DISTINCTIVE INTERIOR DECORATION

Western Venetian Blinds provide a soft, perfectly controlled light which enriches and brings out the full color tones of rugs, drapes and furniture in a charming manner. Over seventy color hues to choose from. Our color charts will be brought to you by our representative.

PRIVACY AND PROTECTION

Western Venetian Blinds meet every requirement for absolute privacy. By angling the slats it is impossible for anyone on the outside to see into the room. Street lights, electric signs, etc., cannot be an annoyance at night. In addition, Western Venetian Blinds present a hindrance to burglars, prowlers or housebreakers.

QUIET

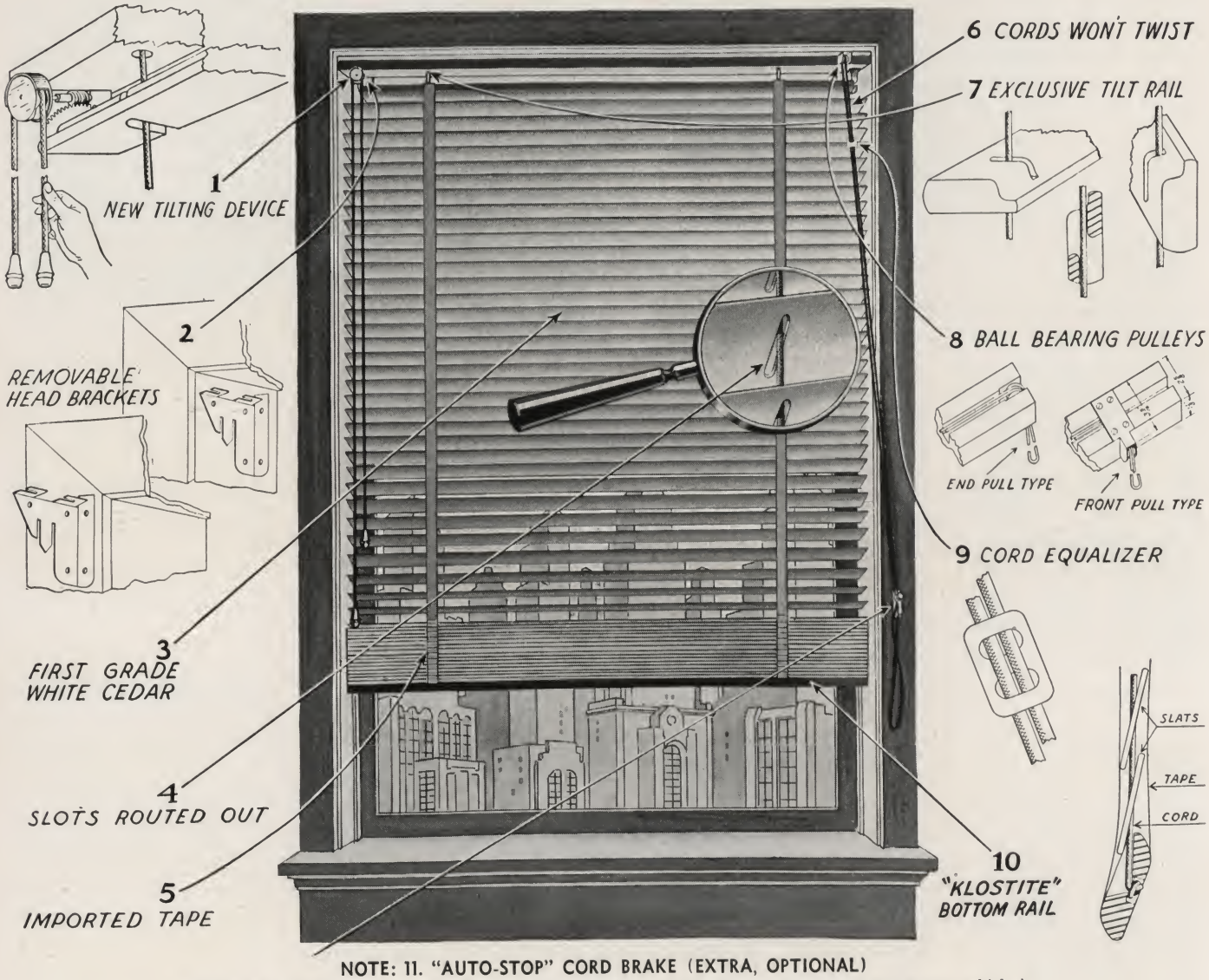
Western Venetian Blinds will not rattle, even in a brisk wind, when furnished with rubber channel guides. They are quiet and perfectly noiseless in operation. Moreover, they shut out traffic noises and other disturbances to a marked degree.

ECONOMY

Western Venetian Blinds are economical. The original cost is the only one for a long period of time. Western Venetian Blinds, over a period of fifteen years, cost 46% less than the old obsolete shades and awnings, yet serve the purpose of both. Repairs, winter storage, and frequent replacement are practically unknown where Western Venetian Blinds are used. Cleaned quickly and easily with our exclusive *Vacuum Blind Cleaning Brush.*

WESTERN VENETIAN BLINDS

11 Points of Structural Superiority



NOTE: 11. "AUTO-STOP" CORD BRAKE (EXTRA, OPTIONAL)

This is an exclusive, patented Western Venetian feature. It is an extra, optional attachment which is designed to hold the blind at any desired height without the use of cord holders on the casing. (Due to overhang, cannot be used when blind is placed in pockets.)

1. PATENTED TILTING DEVICE
New worm gear tilt, exclusive Western patent, enables you to keep slats firmly in desired position. Even largest blinds tilt easily. Design of hangers permits quick removal of tilt rail and dropping of complete blind, for washing windows.

2. INSTALLATION BRACKETS
Make it possible to take entire blind down for renovating and re-install easily without removing brackets.

3. FIRST GRADE WHITE CEDAR
Slats and other wood parts are made from clear selected White Cedar, a wood which has a natural grain, nature's preventive against splitting and warping under trying atmospheric conditions. (No seconds used.) Air seasoned and kiln dried in our own plant.
Will not split, break or warp under ordinary usage during entire life of blind.

4. SLOTS ROUTED OUT
The slots or holes in the slats through which the cords run are routed by special high speed router, giving a smooth, unbroken edge. (Punched holes have ragged, broken edges which wear out the cords quickly and cause rapid deterioration of the slats.) No punched holes in Westerns.

5. IMPORTED TAPE
Tape spun from cotton and linen with cross ladders interwoven with main strands. Selected for highest tensile strength and durability.

6. CORDS WON'T TWIST
All cords hollow braided ⅛ in. diameter, glazed to minimize wear. This assures long life.

7. EXCLUSIVE PATENTED TILT RAIL (CORD SAVER)
Tilt rail so bored that blinds pull up freely, minimizing wear on cord, no matter what angle they are tilted—exclusive Western patent.

8. BALL BEARING PULLEYS
Rollers, over which all lifting cords pass, are steel, double race 22 balls, except where climatic conditions make use of fibre desirable. Even a child can easily raise or lower a Western Venetian Blind.

9. CORD EQUALIZER
A special cord equalizer makes blinds raise evenly no matter whether one or both strands are pulled.

10. "KLOSTITE" BOTTOM RAIL
Another exclusive Western Venetian Patent. The close tight bottom rail prevents any streaks of light escaping into the room when blinds are closed. By affording complete closure it insures additional privacy and eliminates draft at lower section of blind.

TYPES OF WESTERN VENETIAN BLINDS

THE types of Western Venetian blinds, illustrated on these pages, are constructed to fit practically every type of window opening, as well as transoms, circles and doors.

Likewise, ornamental openings are readily treated. The facilities of this company for the treatment of unusual and difficult openings are well known.

TYPE "B"—Single Lift Type (Straight Lift)

For windows less than 48 in. wide and for windows from 48 to 60 in. wide, which contain 35 sq. ft. or less.



A Typical Western Venetian Type "B" Single Lift Blind

TYPE "B" Single Lift Western Venetian Blind is ideal for the narrow type window. Type "B" is particularly recommended for homes, apartment houses, hotels and dwellings where narrow windows are used. Type "B" because of its narrow characteristic, is particularly adaptable for striking and individual color effects. Because of this fact, Type "B" installation can readily become the focal point of any room. See opposite page for construction details.

TYPE "A"—Double Lift Type ("Easy-Lift")

For windows 48 in. or more in width which contain more than 35 sq. ft., and for all windows more than 60 in. wide. Not recommended for windows containing more than 100 sq. ft.



A Typical Western Venetian Type "A" Double Lift Blind

OUR type "A" Double Lift Western Venetian Blind is ideal for large windows, such as found in all banks, public buildings, large show windows, dust backs for large windows, hotel lobby windows, libraries, school buildings, etc.

Type "A" blind is raised by four cords. The arrangement of cords causes the blind to raise six inches for each one foot pull. This means a minimum of effort is required to raise the Type "A" blind. Hence, the name "Easy-Lift." See opposite page for construction details.

OSCILLATING ROLLER TYPE

For any size window, width or area. Should be used in all cases on windows containing over 100 sq. ft.



A Typical Western Venetian Oscillating Roller Type Blind Installed in the Building of the A. O. Smith Corp., Milwaukee, Wis.

OUR Oscillating Roller Type is designed for very large openings; and for all openings where great ease in operation and freedom from cord replacement is desired. Blinds are lifted by means of a wire cable wrapping about a roller, oscillating to prevent piling up of cable. Roller is operated by one sash cord, winding on operating spools, the cord traveling up with bottom rail, thereby eliminating surplus cord length. Wear and tear is eliminated and life of blind prolonged due to easy and precisely controlled mechanism. Movable parts are enclosed in wood or metal housing with removable front, giving access to working parts, and a finished appearance to top of blind. (See page 5 for details.)

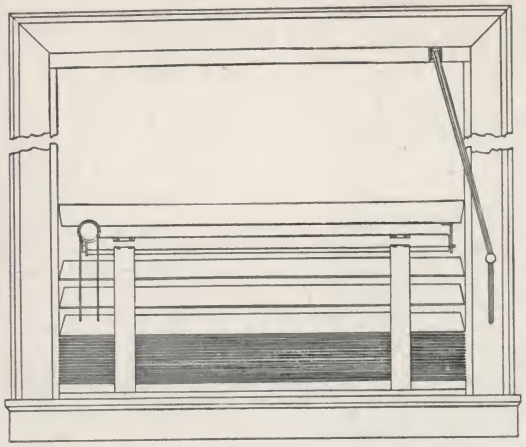
SKYLIGHT TYPE

For all types of skylights in any size or area.



A Typical Installation of Our Skylight Type Western Venetian Blind

IN art galleries, museums, architect's drafting rooms, operating rooms of hospitals, laboratories, courtrooms, etc., it is often desired to take advantage of intensified daylight illumination from overhead skylights—ideal interior light sources. For such instances we have designed our Skylight Type Venetian Blind. The Skylight Type blind can be adjusted and synchronized to the changing direction of the sun's rays, or the change of outside light intensities. It will diffuse light evenly on walls, floors and desks and it can be used in conjunction with any of the other types of Venetian blinds installed in the same room. (See page 6 for details.)



TYPES OF WESTERN VENETIAN BLINDS (Continued)

TYPE "U" (Bottom Accumulation Type)

INTRODUCING our new Type "U"—Bottom Accumulation Venetian Blind which pulls up from the bottom of a window with the accumulation of slats at the bottom, the pull cords running through channel guides. Suitable for windows less than 48 in. wide, and for windows from 48 to 60 in. wide which contain 35 sq. ft. of area or less. (May be used on wider windows wherever Type "A" is suitable, if exposed cords are not an objection.)

Permits same diffusion of light and control of ventilation found in other Western Venetian Blinds. In addition, permits the upper part of a window to be completely uncovered, throwing a high intensity of light toward the ceiling for redistribution. Type "U" is especially valuable in school rooms, etc., located in climates where dark days are prevalent, or in other rooms where high intensities of light are desired without glare.

COLOR SELECTIONS FOR WESTERN VENETIAN BLINDS

WESTERN Venetian Blinds can be supplied in any color to match the decorative scheme of any room.

The greatest efficiency in light control is derived from Western Venetian Blinds lacquered in colors that do not absorb the light, such as aluminum, the various shades of ivory or the very light shades of other colors.

If it is necessary to employ dark colors for a Western Venetian Blind in order to harmonize with the color scheme of a room, it is desirable to specify two-tone slats, making the surface of the slat which faces the window and reflects the sunlight, a cream color. The other side of the slat, as well as the hardware and bottom and top rails, which are seen from within, may then be lacquered the dark color desired without losing the important sunlight reflection qualities.

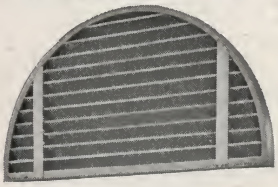
The following table gives the comparative reflection values of various colors:

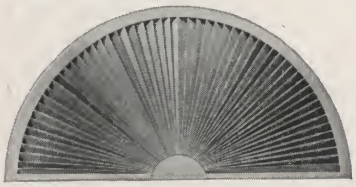
Aluminum	84%	Sage Green	40%
White	80%	Sky Blue	35%
Ivory	70%	Olive Green	20%
Buff	65%	Cardinal Red	20%
		Black	5%

The difference between the percentages given and 100% indicates the light absorption.

Western Venetian Blinds are also supplied with cords and tapes in harmonizing colors to match the room and the color of the blinds. This is a point to remember when specifying colored Western Venetian Blinds.

IRREGULAR SHAPED TYPES WITH STATIONARY SLATS (Non-operating)





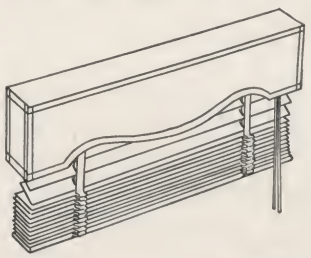
TYPE "F"—This irregular shaped type is often called a "circle-head" blind. Designed primarily to cover the curved or irregular arched openings above the rectangular parts of windows and doors. This type of blind is made with stationary slats tilted to a 45 degree angle, housed into a solid circular laminated frame ⅝x1¾ in. in section.

TYPE "SUNB"—This type carries the same specifications as Type "F" with the following additions: The slats are all fanned out from a common center. With this extreme rigidity there is no need for tapes or center supports. This fan type design is one of great beauty and may be used effectively in the interior decorative scheme of a large room with circle-head windows or doorways.

METAL OR WOOD VALANCES (Extra, Optional)

IN keeping with the modern architectural usage Western Venetian Blinds can be equipped with metal or wood valances, depending upon the type of interior decoration used, and upon the type of blind installed.

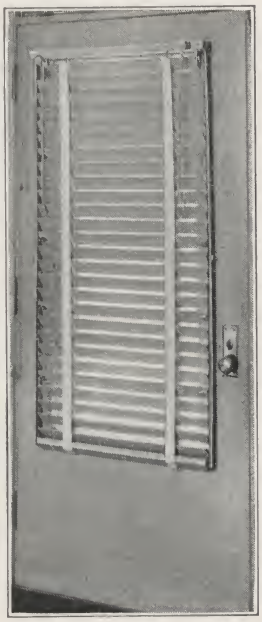
These valances embody the finest type of workmanship and fit in admirably with any architectural decorative scheme. Where necessary, special valances can be made upon order. These metal or wood valances can be made to harmonize with the draperies and other parts of the decoration of the room.

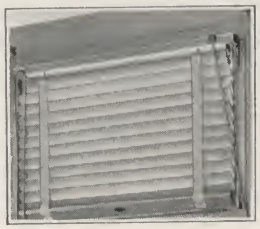


TYPE "B" SINGLE LIFT WITH CHANNEL GUIDES, APPLIED TO DOORS AND TRANSOMS

THIS type of blind, illustrated on the right, is equipped with Channel Guides which hold the blind firmly against the window or door frame when the transom is operated. They likewise prevent the blind from flapping when doors are operated. Channel Guides facilitate the regular operation of the blinds. They may be tilted or raised and lowered the same as other blinds. The slat width for this installation usually conforms to that of other blinds in room.

In transoms the installation is also equipped with Channel Guides. It is also frequently desirable to equip transom blinds with a tilt rod instead of a cord. This can be done easily and it provides less interference with the action of the door than where a cord is used.



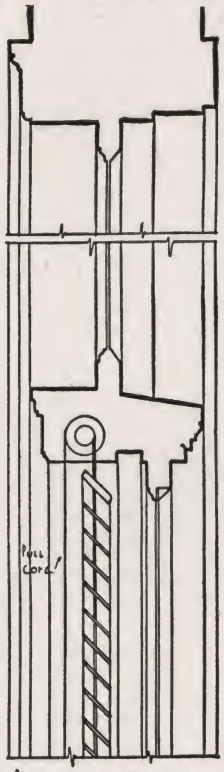


WIDTH OF SLATS

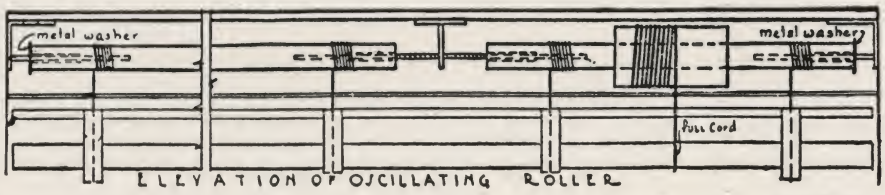
WESTERN Venetian Blinds are made with standard slat widths of 2⅜, 2 and 1½ in. This applies to all types used in industrial, commercial, and residential installations. The 2⅜-in. slat width is most effective in reflecting light and controlling ventilation and is also extremely attractive. Often narrower slats are believed to give a better effect and 2-in. or 1½-in. slats can be furnished.

TYPES OF WESTERN VENETIAN BLINDS (Continued)

① TYPE "LO" (LARGE OSCILLATOR)



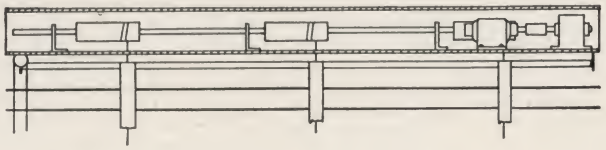
DETAIL OF BLIND OPERATOR CONCEALED IN TRANSOM.



ELEVATION OF OSCILLATING ROLLER

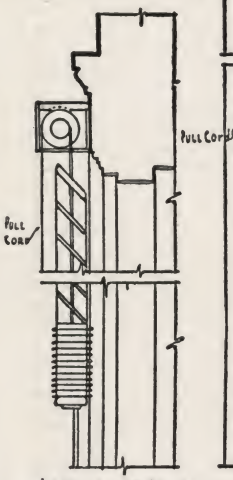
TYPE "LO" (Large Oscillating Roller Blinds) **(Installation shown on page 3)**

Requisite for windows containing over 100 sq. ft. Standard as to slats, ladder tape, cord and finish. Lifted by $\frac{1}{16}$ in. flexible wire cables wrapping over roller designed to oscillate by sash cord winding on operating spool. Working parts should be housed in a wooden case attached to wall over window. Note arrangement of roller as shown in cut. Blinds containing up to 135 sq. ft. require a housing 4½x4½ in. Blinds over 135 sq. ft. require a housing of 5½x5½ in.

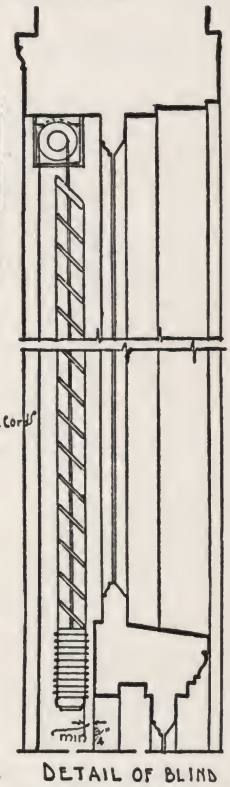


DETAIL OF MOTOR DRIVE OSCILLATOR (Extra, Optional)

A mechanically perfect device which makes the raising and lowering of blinds used in large openings purely automatic. Working diagram shown above depicts an electric motor with the proper hp. to satisfactorily lift the blind, the power of which is transmitted to the roller through a series of worm gears. Remote switch control is employed. Blinds can be stopped at any desired height instantly. Motor drive oscillator is extra, optional equipment. Recommended for only the largest type "LO" installations.

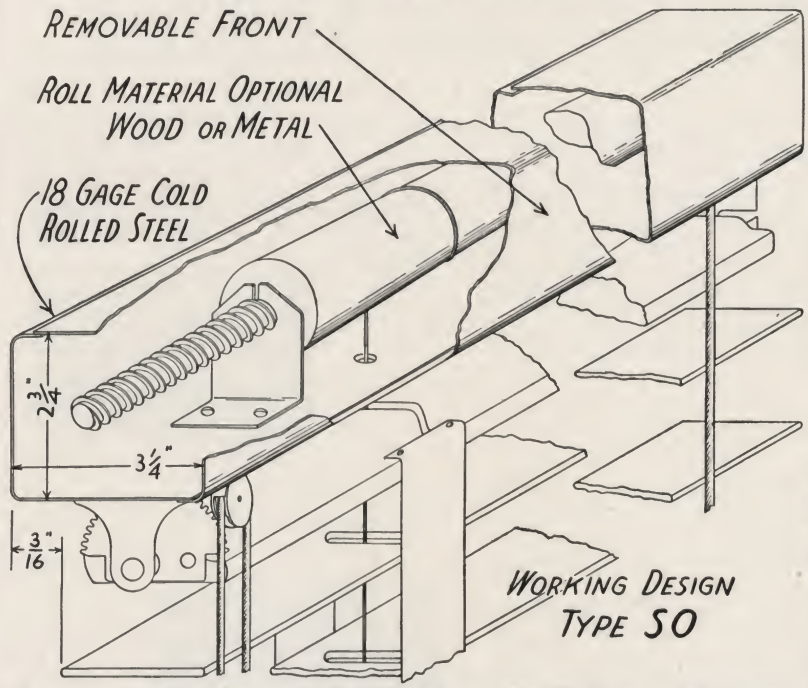


DETAIL OF BLIND ON FACE OF CASING.



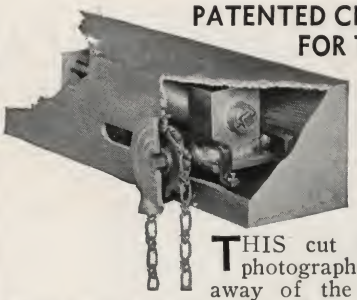
DETAIL OF BLIND OPERATOR CONCEALED AT HEAD.

② TYPE "SO" (SMALL OSCILLATOR)



SUITABLE FOR ANY WINDOW UP TO 48" IN WIDTH CAN BE USED ON WINDOWS UP TO 72" IN WIDTH WHICH CONTAIN LESS THAN 45 SQUARE FEET

PATENTED CHAIN LIFT FOR TYPE "LO"



THIS cut illustrates a photographic break-away of the Chain Lift which may be employed on large, heavy types of "LO" (Large Oscillator) Western Venetian Blinds, when desired. (An optional extra.) It shows the oscillating roll box, shaft bearing, oscillating screw, lifting chain, sprocket wheel, worm gear housing and drive shaft. Insures easy, finger tip control of the raising and lowering of very large types "LO" blinds.

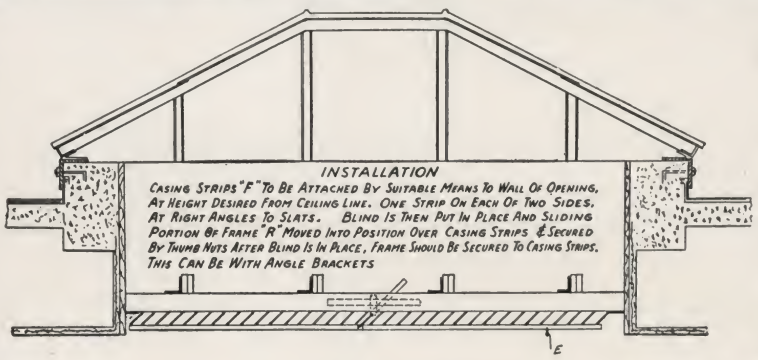
DETAIL OF TYPE "SO" (Small Oscillator)

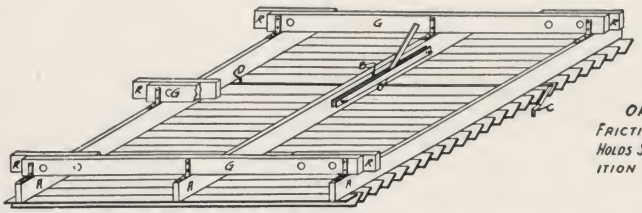
COMBINES the ease of operation feature, of all oscillating types, with mechanical perfection designed to take care of smaller windows. Type "SO" is lifted by a $\frac{1}{16}$-in. flexible wire cable working on the oscillating roller and operated by pull of the sash cord winding on roller. The cutaway section on the left shows the removable front feature, which gives immediate access to all working parts. The housing case is lacquered to match color of the blind. A splendid type of blind, practical in design for long life and freedom from repairs.

DETAIL OF OSCILLATING TYPES WESTERN VENETIAN BLINDS

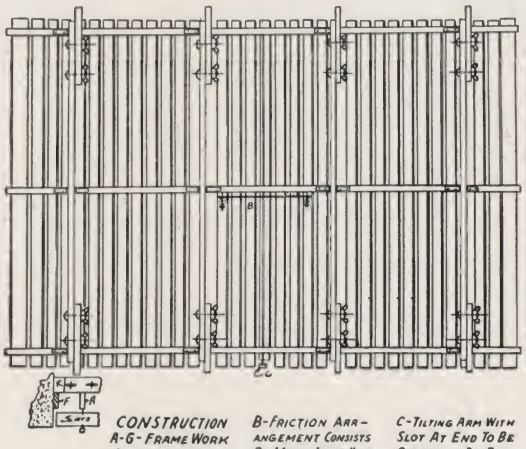
TYPES OF WESTERN VENETIAN BLINDS (Continued)

DETAILS OF SKYLIGHT TYPE WESTERN VENETIAN BLINDS





OPERATION
Friction Arrangement Holds Slats In Any Position Desired



CONSTRUCTION
A-G-Frame Work Constructed Of ⅜"x2⅝" Pieces

B-Friction Arrangement Consists Of Metal Lever Held Between Two Strips Of Metal By Means Of Bolt With Nut And Coil Springs

C-Tilting Arm With Slot At End To Be Operated By Tilting Pole

D-½" Cold Rolled Steel Rod Connecting Tilting Bar Underneath Slats

E-⅝"x⅝" Wood Tilting Bars

F-Casing Strip To Support Blind

R-Sliding Portion Of Frame

NOTE – 2 Casing Strips "F" 1 Tilting Pole And Angle Brackets With Screws, Furnished With Each Blind

MISCELLANEOUS INFORMATION WESTERN VENETIAN BLINDS



A Special Easy-cleaning Feature of Western Venetian Blinds

SPECIAL EASE IN CLEANING WESTERN VENETIAN BLINDS

Cut to the left shows how easy it is to wash windows or clean and repair Western Venetian Blinds. It can be done in the twinkling of an eye by simply lifting the blind out of the patented hangers. The blind can then be lowered and the windows cleaned or repaired. Not necessary to loosen bolts, screws, etc.

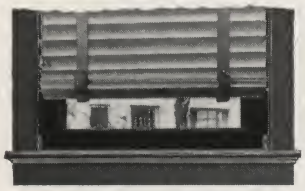
POINTS TO REMEMBER

It should be remembered that Western Venetian Blinds combine all the functions of awnings and window shades and provide important, additional services not performed by either shades or awnings.

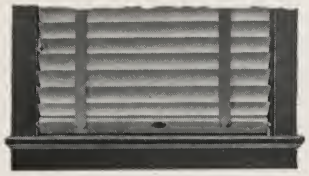
Also that Western Venetian Blinds permit the use of the entire window for ventilation and lighting instead of blocking off uselessly, a portion of it. Drafts are directed upward and away from occupants of the room by angling of the slats.

HOLD-DOWN BRACKETS

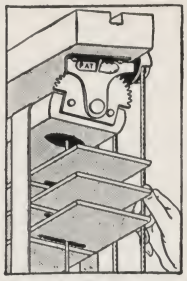
These Hold-Down Brackets shown here serve a twofold purpose: (1) When the blind is pulled down and fastened securely they offer hindrance against



intrusion. (2) They check annoying wind sway of the blind when it is down. (Optional equipment for all movable types of Western Venetian Blinds.)



MISCELLANEOUS INFORMATION WESTERN VENETIAN BLINDS



WORM GEAR TILT

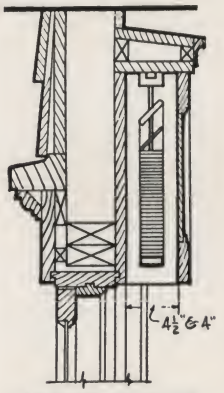
EXCLUSIVE, PATENTED, WORM GEAR TILT HANGER

Keeps slats locked securely in any desired position. Worm gear ratio enables operator to easily place slats at exact angle required. Design of segment permits instant removal of tilt rail and dropping of blind to facilitate cleaning and repair of windows.

ECONOMY VENETIAN BLINDS

DESIGNED primarily to meet the demand for a blind where high quality and excellence are not required, the Economy Venetian Blind has been placed on the market to be offered where price is the governing factor in the installation.

Particularly adaptable in the commercial field where the blinds in the job number more than forty. Can be obtained in "A" and "B" types only, with 2⅜-in. slats. Specifications may be had upon application. Worm gear tilt and other important Western features are, of course, not available on this blind because of low price.



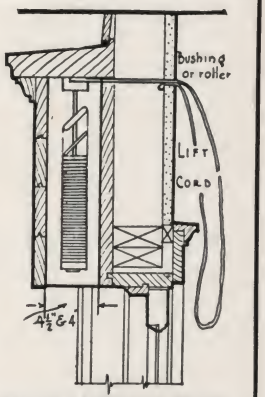
SECTION SHOWING BLIND CONCEALED INSIDE OF ROOM

DATA FOR USE IN DESIGNING POCKETS

TYPE	MINIMUM POCKET WIDTH			ACCUMULATED SPACE		
	2⅜" SLATS	2" SLATS	1⅝" SLATS	2⅜" SLATS	2" SLATS	1⅝" SLATS
"A" "B"	4½"	4"	4"	1¼" FOR EACH FOOT IN BLIND HEIGHT PLUS 3"	1" FOR EACH FOOT IN BLIND HEIGHT PLUS 3"	2" FOR EACH FOOT IN BLIND HEIGHT PLUS 3"
"SO" OSCILLATOR	4½"	4"	4"	1⅛" FOR EACH FOOT IN BLIND HEIGHT PLUS 4⅛"	1⅝" FOR EACH FOOT IN BLIND HEIGHT PLUS 4⅛"	2" FOR EACH FOOT IN BLIND HEIGHT PLUS 4⅛"
"LO" OSCILLATOR 4⅛" BOX	5"	4½"	4½"	1⅛" FOR EACH FOOT IN BLIND HEIGHT PLUS 6½"	1⅝" FOR EACH FOOT IN BLIND HEIGHT PLUS 6½"	2" FOR EACH FOOT IN BLIND HEIGHT PLUS 6½"
"LO" OSCILLATOR 5⅛" BOX	6"	6"	6"	1¼" FOR EACH FOOT IN BLIND HEIGHT PLUS 7½"	1⅝" FOR EACH FOOT IN BLIND HEIGHT PLUS 7½"	2" FOR EACH FOOT IN BLIND HEIGHT PLUS 7½"
"U"	4"	3½"	3½"	1⅛" FOR EACH FOOT IN BLIND HEIGHT PLUS 4"	1⅝" FOR EACH FOOT IN BLIND HEIGHT PLUS 4"	2" FOR EACH FOOT IN BLIND HEIGHT PLUS 4"

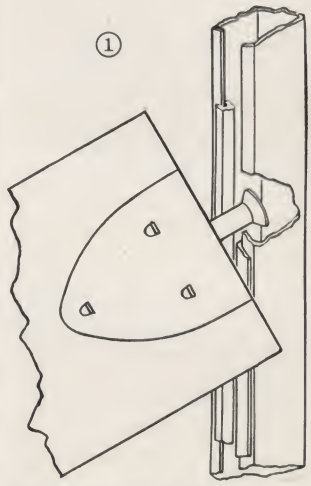
"AUTO-STOP" CORD BRAKE NOT TO BE USED IN POCKETS

Through the use of the data chart on the left, architects are able to design pockets to take care of the accumulation and to conceal it entirely from view. The cut on the left shows a section where the blind is concealed in a pocket inside of the room. The cut on the right shows a section where the blind is concealed outside, yet operating from the room. (*Note:* The "auto-stop" cord brake is not to be used in pockets.)



SECTION SHOWING BLIND CONCEALED OUTSIDE—OPERATING FROM ROOM

OPTIONAL EXTRAS WESTERN VENETIAN BLINDS



RUBBER LINED CHANNEL

① PATENTED RUBBER LINED CHANNEL GUIDES

Supplied with any type of blind. Being rubber lined, the slat clips placed on each fifth slat of the blind, slide noiselessly in the channel guides and prevent billowing and swinging of the blind. Furnished in steel, sprayed the color of the blind, or solid aluminum.

② PATENTED NOISELESS CHANNEL GUIDES

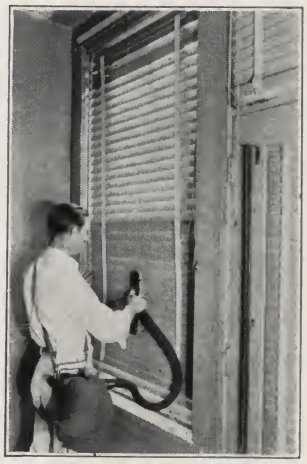
Another view of the rubber lined channel guide showing our exclusive, patented noiseless feature.

③ STANDARD CHANNEL GUIDES

Our standard channel guides are made of solid aluminum. Aluminum slat clips placed on each fifth slat and furnished with tough, fibrous washers, slide in these channels and prevent billowing and swaying of blind.

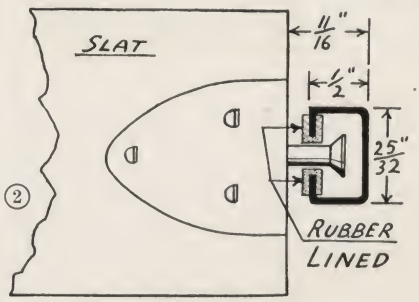
④ MITRED BLINDS

These blinds are designed for conditions where two windows meet at an angle, such as store fronts, etc. Such blinds are mitred to allow free operation of each—maintaining minimum amount of operating clearance and eliminating light streaks.

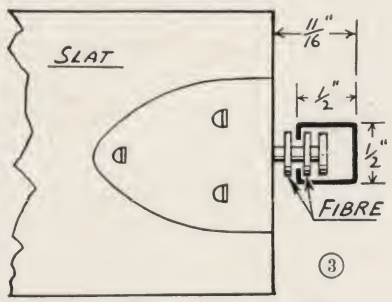


WESTERN BLIND VACUUM CLEANING BRUSH

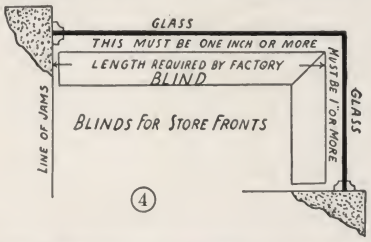
WE can now furnish a specially designed vacuum cleaner with special brush for Western Venetian Blinds. Light weight, high speed electric motor furnishes powerful suction, complete with ample tubing and dust collecting bag. Cleans blinds thoroughly, quickly and cheaply. Operates from any electrical outlet. Special Venetian Blind brush is also sold separately for attaching to hose of any vacuum cleaning device.



NOISELESS CHANNEL GUIDE RUBBER LINED CHANNEL



STANDARD CHANNEL GUIDE SOLID ALUMINUM



MISCELLANEOUS INFORMATION WESTERN VENETIAN BLINDS

ARCHITECTS' SPECIFICATIONS FOR WESTERN VENETIAN BLINDS

Venetian Blind Specifications for.....Building
Address .....

All Venetian Blinds to be manufactured in accordance with following specifications, with necessary hardware, and installed in a workmanlike manner. Brand to be "WESTERN," as manufactured by Western Venetian Blind Company, 2700 Long Beach Ave., Los Angeles, and 101 Park Ave., New York City.

Windows marked on plans. (Select type used.)

TYPE "A" VENETIAN BLINDS shall be furnished with double lift cord threading, "or easy-lift cord arrangement," as below specified.

TYPE "B" VENETIAN BLINDS shall be single lift cord threading as below specified.

TYPE "U" VENETIAN BLINDS shall be bottom accumulation type as below specified.

TYPE "SO" VENETIAN BLINDS shall be small Oscillating Roll lift type as below specified.

TYPE "LO" VENETIAN BLINDS shall be large Oscillating Roll lift type as below specified.

TYPE "SKY" VENETIAN BLINDS shall be Skylight Blinds as below specified.

TYPE "F" VENETIAN BLINDS shall be irregular shaped, stationary slat type, as below specified.

TYPE "SUNB" VENETIAN BLINDS shall be Sunburst, as below specified.

GENERAL SPECIFICATIONS

FOR ALL VENETIAN BLINDS EXCEPT SKYLIGHT (TYPE "SKY"), IRREGULAR SHAPED STATIONARY SLATS (TYPE "F") AND SUNBURST (TYPE "SUNB").

WOOD PARTS—All wood parts shall be furnished of clear, selected, air seasoned, kiln dried White Cedar, moulded to size, manufactured from lumber of straight grain, free of defects.

TABLE—SLAT AND RAIL DIMENSIONS, INCHES

Slat size	Head rail	Tilt rail	Bottom rail			
			Type "A"	Type "B" Type "U"	Type "SO"	Type "LO"
⅛x2⅜	1⅛x2⅝	⅞x2⅜	1⅛x2⅜	¾x2⅜	¾x2⅜	¾x2⅜
⅛x2	1⅛x2	⅞x2	1⅛x2	¾x2	¾x2	¾x2
⅛x1½	1⅛x2	⅞x2	1⅛x1½	¾x1½	¾x1½	¾x1½

Projection—Tilting device ½". Front pull device 1⅛".
See table, page 7, for dimension of pocket for concealing slat accumulation.

SLATS—To be ⅛" thick, ..." wide, smooth rounded edges. (Indicate whether 2⅜", 2" or 1½" wide.)

HEAD RAILS—To be 1⅛" thick, ..." wide, smooth rounded edges on bottom only. (See above table.)

TILT RAIL—To be ⅞" thick, ..." wide, smooth rounded edges. (See above table.)

CORD SLOTS—Cord slots in slats shall be routed (not punched), with high speed router, making clean cut, smooth edges, minimizing cord wear. Slot in tilt rails (cord saver design) to be so drilled that cords move vertically through the rail without friction, permitting blind to be raised and lowered while tilted, without binding on cords. Bottom rail drilled "Klosetite" principle.

TILTING DEVICE—Shall be worm gear type, die cast, designed to permit the fullest angle of tilt, and locking slats securely at any angle.

CENTER SUPPORTS—Shall be set between tilt rail and head rail on blinds over 48" in width, to prevent sagging and warping of tilt rail. These supports shall be so arranged that full angle of tilt is not restricted.

CORD EQUALIZER—Shall be furnished for pull cords, insuring even rise of both ends of blind when lifted.

HOLD-DOWN BRACKETS—Shall be furnished to check wind sway. (Optional.)

AUTO-STOP CORD BRAKE—Shall be installed, holding blind at any desired height without use of cord holders on casing. (Extra, optional.)

PULLEYS—Shall be double race, 22 balls, steel shafts, unless climatic conditions of location of job make fibre pulleys preferable.

CORDS—All tilt cords and pull cords shall be ⅛", of best quality hollow braided and glazed to minimize wear.

TILT CORD KNOBS—Shall be furnished of solid aluminum with center groove holding rubber ring bumper.

HARDWARE—All hardware to be sprayed aluminum, except tilt cord knobs and cord holders which shall be solid aluminum. (Optional—All hardware shall be sprayed to match color of blind.)

INSTALLATION BRACKETS—Where installation conditions permit, utility brackets, for installing blinds on face of casings, or between jambs, shall be used. These brackets shall permit of quick removal of entire blind, without taking off installation brackets.

HANGERS—Shall be of type to permit instant removal of tilt rail, and lowering of blind to facilitate washing of windows.

FINISH—All wood parts shall receive a series of coats of lacquer of pyroxylin base, creating a durable finish. Color shall be Western Venetian Blind Company's color No. ..... (See Western Venetian Blind Company's color charts. Mailed upon application.)

LADDER TAPE—Shall be furnished with cross ladders interwoven to main strands, spun from cotton and linen, of high tensile strength, free of weaving defects. Color as selected from Western chart.

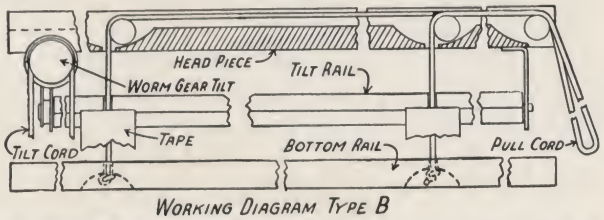
CHANNEL GUIDES—Solid aluminum channels ½"x½" shall be installed, into which solid aluminum slat clips, placed on both ends of each fifth slat, shall slide, preventing billowing of blind. (Extra, optional.)

RUBBER LINED CHANNEL GUIDES—Solid aluminum channel ½"x⅝", rubber faced where contacting slat clips, shall be installed, into which solid aluminum slat clips, placed on both ends of each fifth slat, shall slide. Silent operation. (Extra, optional.)

TYPE "B" VENETIAN BLINDS

(For windows less than 48" wide, and for windows from 48" to 60" wide which contain 35 sq. ft. or less.)

Specifications shall be the same as given above under "General" with following addition: Single lift threading of lift cords shall be employed. (See detail below.)



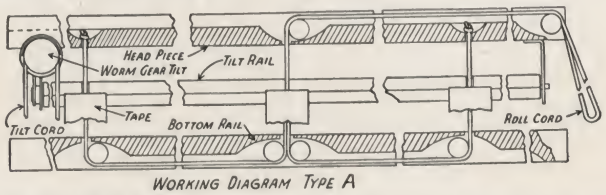
WORKING DIAGRAM TYPE B

BOTTOM RAIL—Shall be ¾" thick ....." wide. (See table under "General.")

TYPE "A" VENETIAN BLINDS

(Double cord threading, or "Easy-Lift.") (For windows 48" or more in width which contain more than 35 sq. ft. and for all windows more than 60" wide. Not recommended for windows containing more than 100 sq. ft.)

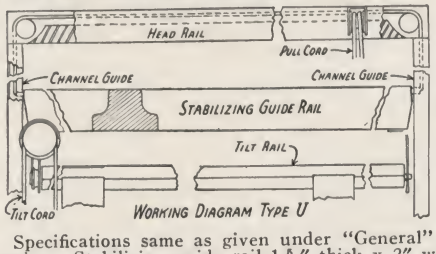
Specifications shall be as given under heading "General" with addition of following: Threading of blinds shall be so arranged that double lift threading principle is employed, making for ease in raising blind. (See detail below.)



WORKING DIAGRAM TYPE A

BOTTOM RAIL—Shall be 1⅛" thick ....." wide. (See table under "General.")

TYPE "U" VENETIAN BLINDS



WORKING DIAGRAM TYPE U

Bottom Acumulation Type — (Suitable for windows less than 48" wide and for windows from 48" to 60" wide which contain 35 sq. ft. or less.) (If there is no objection to exposed cords, may be used for windows containing up to 100 sq. ft.)

Specifications same as given under "General" with addition of following: Stabilizing guide rail 1⅛" thick x 2" wide shall be furnished from which body of blind shall be suspended. Cords shall operate through side channel guides. Blind shall rise from the bottom.

BOTTOM RAIL—Shall be ¾" thick ....." wide. (See table under "General.")

TYPE "SO" VENETIAN BLINDS

(Small oscillator—see page 5.) (Suitable for windows up to 48" in width, can be used for windows up to 72" in width which contain less than 45 sq. ft.)

Specifications same as given under heading "General," with addition of following: Blind shall be lifted by winding of ⅛" flexible wire cable on oscillating roller operated by pull of sash cord winding about roller itself. This roller shall be encased in an 18-gauge cold rolled steel case, 3¼" wide x 2¾" high. This case shall have removable front, giving immediate access to all working parts and be lacquered to match wood parts. The roller shall be ..... (Optional—rolls furnished either in solid wood or metal tubing.)

BOTTOM RAIL—Shall be ¾" thick ....." wide. (See table under "General.")

FINISH—Shall be same as specified under heading "General" for other types.

SPECIFICATION DATA FOR ARCHITECTS WESTERN VENETIAN BLINDS

TYPE "LO" VENETIAN BLINDS

(Large oscillator—see page 5.) (Suitable for windows containing 45 sq. ft. or more. Should be used in all cases on window containing over 100 sq. ft.)

Specifications shall be same as given under heading "General" with addition of following: Blind shall be listed by winding of flexible wire cable on oscillating roll operated by pull of sash cord winding about spool of size determined by weight of blind, mounted on oscillating roller. The entire roll shall be in a case. This case shall be provided with removable sections, giving immediate access to all working parts.

SIZE OF CASE—4½"x4½" for blinds containing up to 140 sq. ft.
5½"x5½" for all blinds containing more than 140 sq. ft.

BOTTOM RAIL—Shall be ¾" thick ...." wide. (See table under "General.")

CHAIN LIFT—(See page 5.) Chain operated lifts employing the worm gear principle shall be installed. (Extra, optional.) (Special attachment for Type "LO.")

MOTOR DRIVE—(See page 5.) Electric motor of proper hp. rating to satisfactorily lift blind, power of which is transmitted to the roll through a series of worm gears, shall be installed. Control switches shall be installed in a convenient position near the window. All wiring shall be in conduits. (Extra, optional.)

TYPE "F" VENETIAN BLINDS

(Stationary blinds for irregular shaped window heads.) (See page 4.)

FRAME—Segment shall be laminated wood ⅝" thick, and of a width to accommodate slat width of (specify 2⅜", 2" or 1½") set on an angle of 45 degrees.

BOTTOM RAIL—Shall be 1⅛" thick, width to conform to width of segment.

SLATS—Shall be notched into perpendicular members spaced not more than 31" apart and covered by tapes. All slat ends shall be fastened securely to segment.

FINISH—Shall be same as finish specified under "General for all blinds."

TYPE "SUNB" VENETIAN BLINDS

(Sunburst)—Specifications same as Type "F" with following addition: Slats shall be fanned out from common centre, no tapes or centre supports shall be installed.

FINISH—Shall be same as finish specified under "General for all blinds."

TYPE "SKY" VENETIAN BLINDS

(Skylight Blinds.) (See page 6)—The slats shall be suspended from a specially built frame. This frame shall consist of a series of cross members ⅞"x2⅛" of suitable number to prevent sagging. Tilting bars shall be correctly placed at right angles and attached to each slat not more than 36" apart, causing all slats to tilt simultaneously.

SLATS—Shall be (specify 2⅜", 2" or 1½") wide.

FRICTION ARRANGEMENT—This blind shall be provided with a friction arrangement which will hold slats at any desired angle.

FINISH—Shall be same as specified under "General" for other types.

OPERATING POLE—Shall be furnished to open and close.

CHAIN TILT—Shall be furnished to operate with endless jack chain in place of operating pole, slats being held by friction arrangement. (Optional.)

WORM GEAR TILT—These blinds shall be operated by endless jack chain through worm gear arrangement. (Extra, optional.)

★A NATION-WIDE SERVICE

THERE IS A WESTERN VENETIAN SALES REPRESENTATIVE NEAR YOU—CONSULT YOUR LOCAL CLASSIFIED DIRECTORY—

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Terre Haute, Ind.

Washington, D. C.

Minneapolis, Minn.

Ancon, C. Z.

Honolulu, T. H.

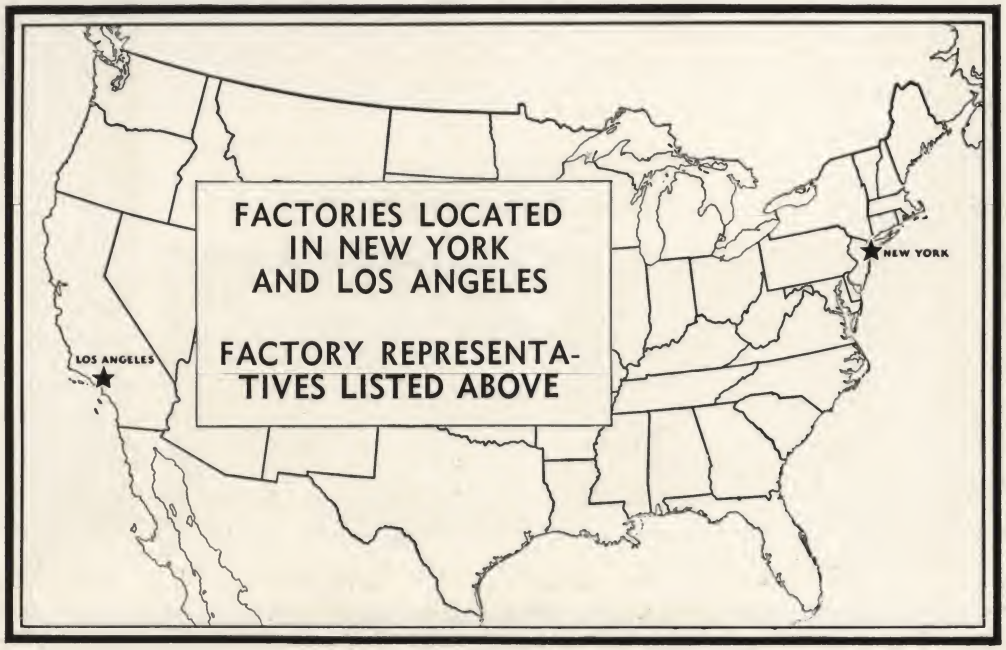
Buenos Aires, Argentine Republic, S. A.

Maracaibo, Venezuela, S. A.

LEADERS IN THE FIELD

The WESTERN VENETIAN BLIND COMPANY has been in business for over twenty years.

This company has specialized in the production of Venetian blinds and Western Venetian Blinds are in use in thousands of America's finest office buildings, public buildings, universities and schools, libraries, hospitals, apartments, hotels, banks, residences, stores, show rooms, etc.



SALES AND SERVICING

Factory representatives give information, quote prices and discuss construction problems connected with Venetian Blinds, without obligation. They also have charge of installation work in their territories and service the product after it is sold. Hundreds of prominent department stores and decorating establishments in America handle Western Venetian Blinds.



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SCHOOLS

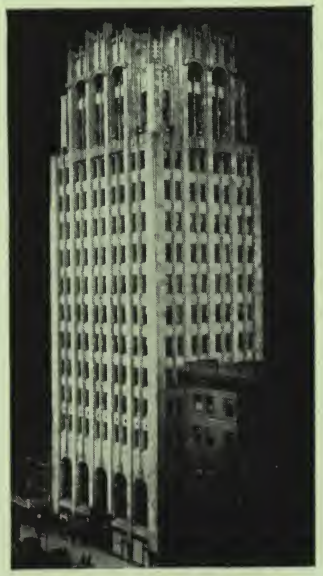
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WESTERN VENETIAN BLIND COMPANY · NEW YORK · LOS ANGELES

ATHEY CLOTH LINED WEATHERSTRIP CO.

Cloth Lined Metal Weatherstrip—Sealtite Caulking Compound

6035-6045 West 65th Street, CHICAGO, ILL.

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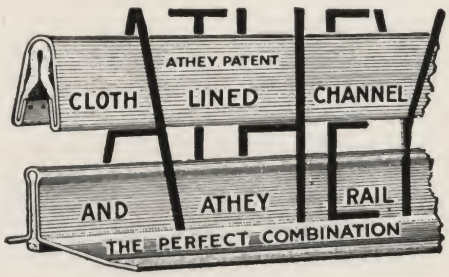
CANADIAN OFFICE AND FACTORY: Cresswell-Pomeroy Ltd., 3989 So. Ambroise Street, MONTREAL, QUE.

For our page on Window and Skylight Shades, see Manufacturers' Index

ATHEY CLOTH LINED METAL WEATHERSTRIP

Athey Cloth Lined Metal Weatherstrip, the only weatherstrip using the cloth to metal feature, has been on the market for over twenty-five years. It has been installed on many of the best buildings in the United States and Canada for owners and architects who desire the best, even though the initial cost is higher than for ordinary weatherstrip. Of our early installations we can point to the St. Joseph's Hospital of St. Louis and the Blackstone Hotel of Chicago, who are still obtaining the maximum in efficiency after twenty years of service, making the yearly cost lower in comparison with cheap, inferior weatherstrip.

Unlike the ordinary channel used in many two-piece strip installations, the Athey channel is double the usual width and lined with a cloth made especially for this purpose, which not only prevents air leakage but is a dust preventive and soundproofing as well. Rail members are also backed with felt which prevents leakage at the jamb, a common weakness in weatherstrip installation due to infrequent nailing of the rail member. All cloth and felt used is chemically treated, guarding against rot or deterioration, so this part of the weatherstrip as well as the metal is guaranteed for the life of the building. All Athey Weatherstrip is made of sheet zinc cut across the grain, the most expensive but assurance against cracking.



In using Athey strip a continuous contact is afforded all around the window, the strip being mitred at all corners, a result not obtained by many metal to metal contact strips where it is necessary to revert to a rib strip at the head and sill.

Athey Weather Strip is sold and installed by one hundred and twenty representatives, those in the larger cities listed above. Write to us for our latest catalogue, showing details of installation for every type of window or door, whether wood or metal. Samples of strip will be furnished when requested.



Department of Public Welfare
CITY OF ST. LOUIS
OFFICE OF
DIRECTOR OF PUBLIC WELFARE
329 MUNICIPAL COURTS BLDG.

February 16, 1929.

The Athey Company,
Gentlemen:--

You will perhaps be glad to know that through the weather-stripping job handled by your people at the City Sanitarium recently, we were able to discontinue the use of one 350 horse-power boiler, a saving to the City of about $1500.00 a month in coal. We were also able to cancel an order for about $2000.00 worth of blankets, which had been requisitioned for use during the present winter.

Feeling that this information would be of interest to you, we gladly submit it.

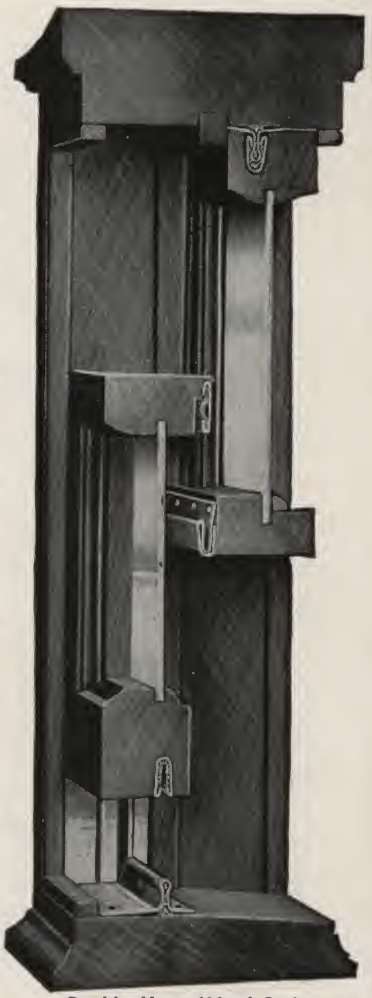
Yours very truly,

H. L. Dalsheimer
Director of Public Welfare

This Illustration at the Left

Shows the largest sanitarium in the United States which has been operated—the main building for sixty years, the wings for twenty years—with this enormous waste of fuel.

The entire cost of the weatherstripping was absorbed by the savings in fuel, blankets and janitor service in the first winter. A $30,000 boiler was eliminated—the cloth to metal contact accomplished it.



Double Hung Wood Sash

ACCURATE METAL WEATHER STRIP CO.

MAIN OFFICE AND FACTORY

216 East 26th Street

NEW YORK, N. Y.

REPRESENTED IN ALL THE PRINCIPAL CITIES OF THE UNITED STATES, CANADA AND EUROPEAN COUNTRIES

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ACCURATE METAL WEATHER STRIPS are adapted to all types of wood, metal or metal covered windows and doors—manufactured of zinc, copper, bronze or brass, cut and formed across the grain.

ACCO-LASTIC CAULKING COMPOUND applied to window and door openings between framework and masonry—making a weathertight joint when setting brass thresholds and special brass saddles.

ACCO-AUTOMATIC DOOR BOTTOMS for interior doors—sealing the opening between doors and saddles.

BRASS SADDLES—Special types which are weatherproof; also plain or fluted tops, various widths.

For Casements and French Doors, Special Brass Saddles (all widths) and Brass Channel Water-Bar applied at the sills and are *guaranteed* watertight.

TRADE MARK
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REG. U.S. PAT. OFF

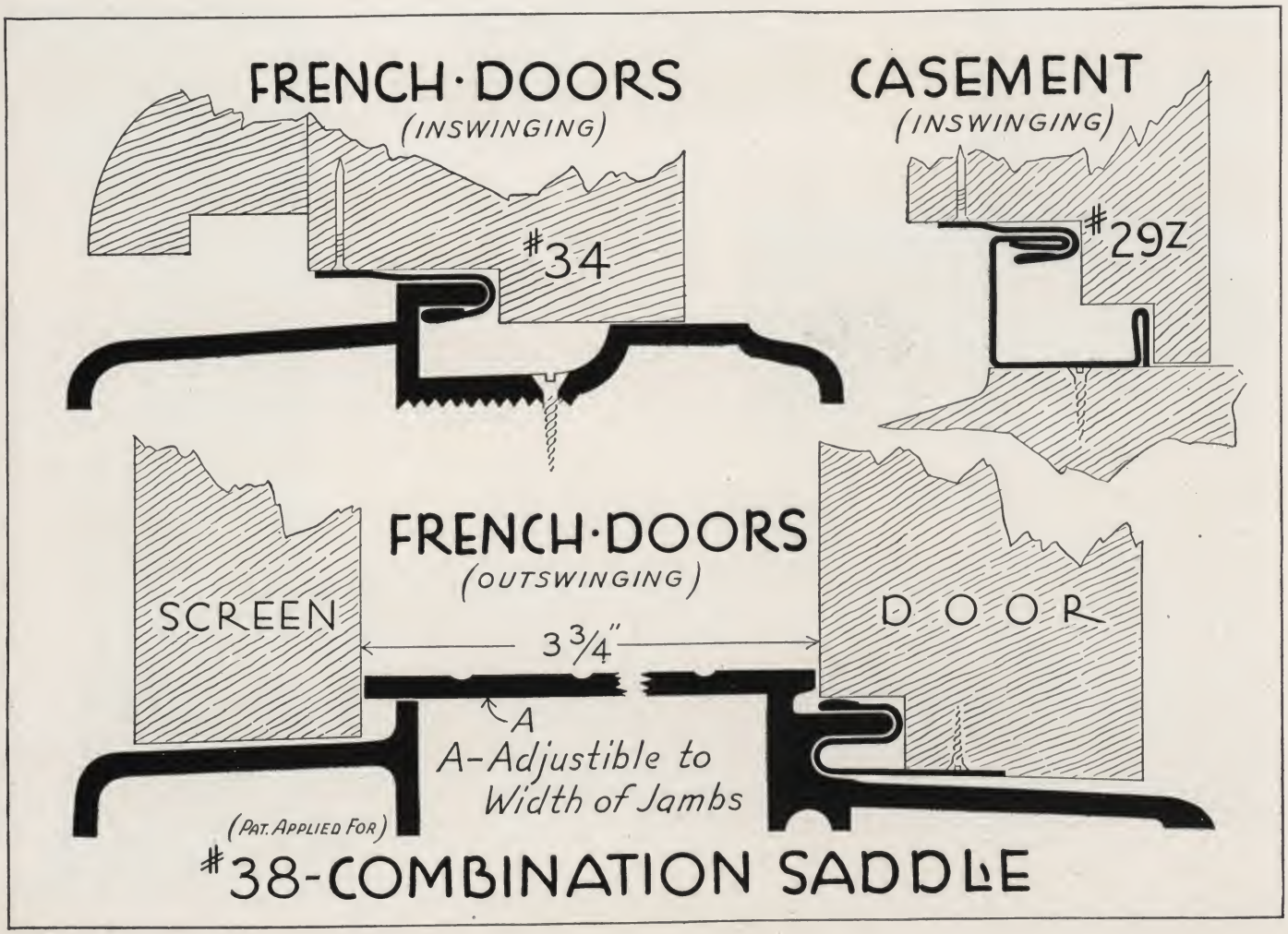
Service

We own and operate our plant at 216 East 26th Street and have been manufacturing metal weather strips since 1900. We maintain factory branch representatives in principal cities and carry a full line of equipment to execute prompt and efficient service.

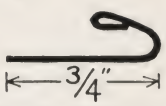
Architectural Department

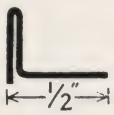
Architects are invited to make use of our Engineering Department. Inquiries in regard to special conditions cheerfully considered and practical suggestions and recommendations made.

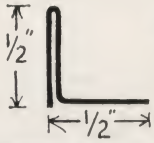
Inquiries should be sufficiently complete to enable us to fully understand conditions and result desired.

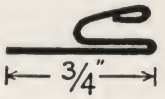


ACCURATE — CASEMENT AND DOOR EQUIPMENT — ACCURATE

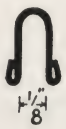
16 Threshold Hook Zinc or Bronze


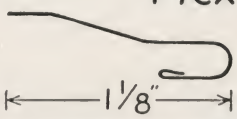
17 Single Base


17A Single Base


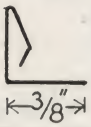
18 Kalamein Equipment #11 Gauge Zinc


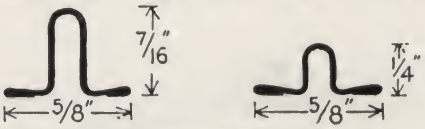
19 Zinc Liner #11 Gauge Zinc Also #9 Gauge Zinc

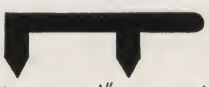

20 Zinc Liner #9 Gauge Zinc


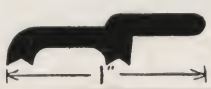
21 Flexible Bronze Hook


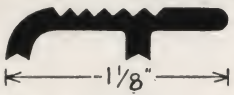
22 Lock Strips

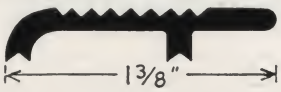

22A Lock Strips


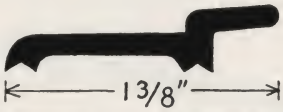
Zinc Screen Guides


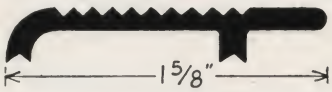
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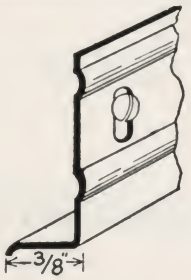
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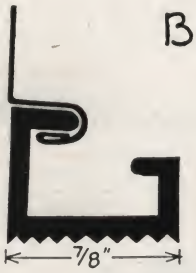
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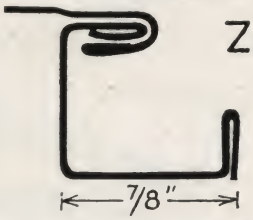
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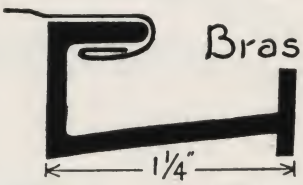
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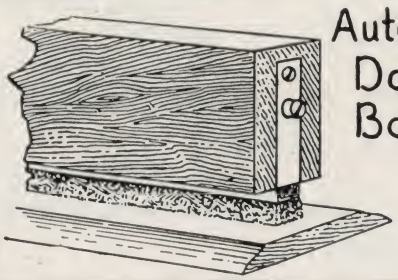
27


Brass Ell


29 Brass Channel Water Bar


29Z Zinc Channel Water Bar


29A Brass Channel Water Bar


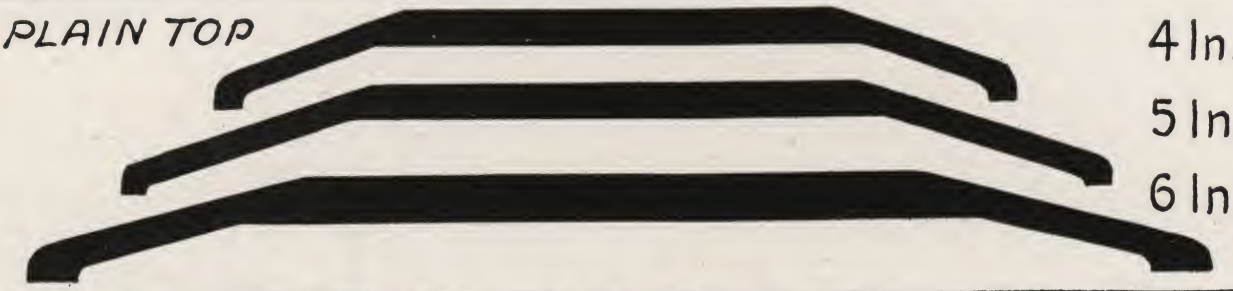
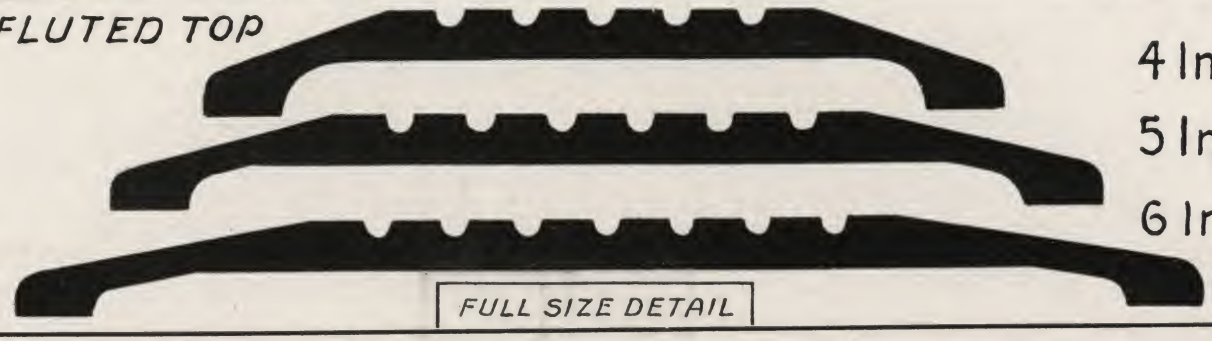
Automatic Door Bottom


FULL SIZE DETAIL

ACCURATE

BRASS SADDLES

ACCURATE

28		4¼ In.
28A		4¼ In.
30		3½ In.
32		5 In.
33		6 In.
34		4¼ In.
	PLAIN TOP 	4 In. 5 In. 6 In.
	FLUTED TOP 	4 In. 5 In. 6 In.

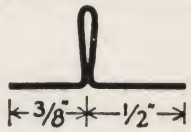
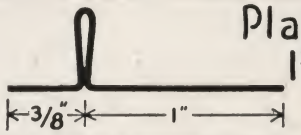
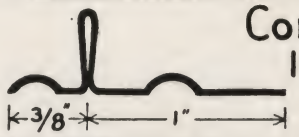
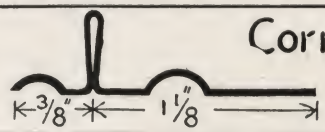
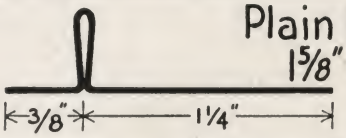
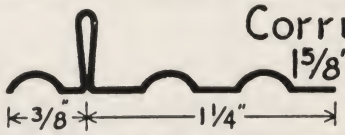
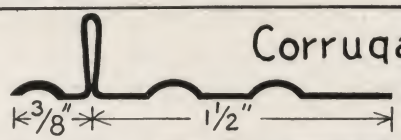
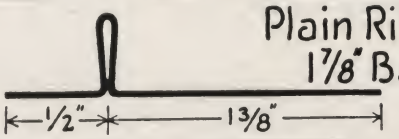
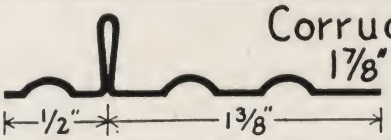
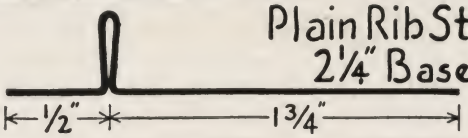
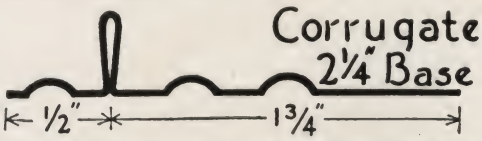
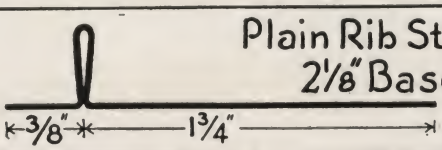
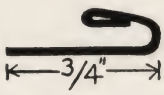
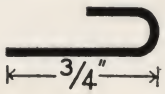
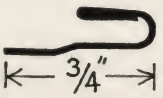
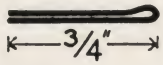
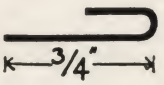
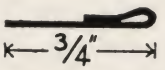
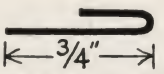
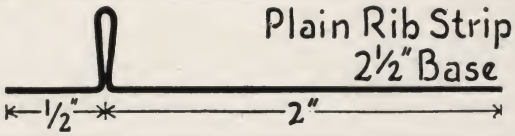
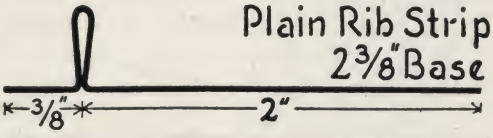
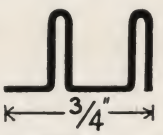
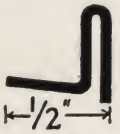
FULL SIZE DETAIL

ACCURATE

DOUBLE HUNG EQUIPMENT

All Rib Strip is made of No. 9 Gauge Sheet Zinc, cut across the Grain—No. 12 Gauge Zinc Stock to Order

ACCURATE

1		Plain Rib Strip 7/8" Base	
2		Plain Rib Strip 1 3/8" Base	
2C		Corrugated 1 3/8" Base	
2CX		Corrugated 1 1/2" Base	
3		Plain Rib Strip 1 5/8" Base	
3C		Corrugated 1 5/8" Base	
3CX		Corrugated 1 7/8" Base	
4		Plain Rib Strip 1 7/8" Base	
4C		Corrugated 1 7/8" Base	
5		Plain Rib Strip 2 1/4" Base	
5C		Corrugated 2 1/4" Base	
6		Plain Rib Strip 2 1/8" Base	
7		Meeting Rail Hook	
7A		Meeting Rail Hook	
7C		Meeting Rail Hook	
8		Meeting Rail Flat Strip	
8A		Meeting Rail Flat Strip	
8B		Meeting Rail Flat Strip	
8C		Meeting Rail Flat Strip	
9		Plain Rib Strip 2 1/2" Base	
10		Plain Rib Strip 2 3/8" Base	
11		Simplex Type	
11A		Channel #16 Gauge Zinc Liner #9 Gauge Zinc	
12		#16 Gauge Sill Drilled and Countersunk	

FULL SIZE DETAIL

CHAMBERLIN METAL WEATHER STRIP COMPANY, INC.

DETROIT, MICH.

FACTORIES: DETROIT, MICH. and PERU, ILL.

DIRECT FACTORY BRANCHES

ATLANTA, GA.
BALTIMORE, MD.
BOSTON, MASS.
BUFFALO, N. Y.
CHARLESTON, W. VA.
CHARLOTTE, N. C.
CHICAGO, ILL.
CINCINNATI, OHIO
CLEVELAND, OHIO
COLUMBUS, OHIO
DALLAS, TEX.
DAVENPORT, IOWA
DAYTON, OHIO
DENVER, COLO.
DES MOINES, IOWA
DETROIT, MICH.
HARRISBURG, PA.
INDIANAPOLIS, IND.
JACKSONVILLE, FLA.
KANSAS CITY, MO.
LOS ANGELES, CALIF.
LOUISVILLE, KY.
MEMPHIS, TENN.
MILWAUKEE, WIS.
MINNEAPOLIS, MINN.
NASHVILLE, TENN.
NEWARK, N. J.
NEW HAVEN, CONN.
NEW YORK, N. Y.
OMAHA, NEB.
PHILADELPHIA, PA.
PITTSBURGH, PA.
PORTLAND, ORE.
PROVIDENCE, R. I.
RICHMOND, VA.
ST. LOUIS, MO.
SAN FRANCISCO, CALIF.
SCHENECTADY, N. Y.
SCRANTON, PA.
SOUTH BEND, IND.
TERRE HAUTE, IND.
TOLEDO, OHIO
WASHINGTON, D. C.

SALES OFFICES IN 60 OTHER CITIES OF THE UNITED STATES

Member of The Producers' Council, Inc.

PRODUCTS—(For Chamberlin Screens, See Manufacturers' Index for Catalogue)

Chamberlin Equipment for All Types of Openings

Space does not permit showing details of a complete line of Chamberlin Weather Strips.

Chamberlin facilities enable the handling of any special requirement. Among the more general types of openings not shown here Chamberlin can equip the following:

Double hung steel windows; pivot windows; hollow metal windows; transoms; steel casements; projected and pivoted steel windows, etc.

For Double Hung Windows

Equipment 100 is a development of 38 years of weather stripping representing time-tried designs. The tongue allows for expansion and contraction without losing a sealing contact. Corrugations of side strips insure easy operation and perfect installation.

Meeting rail strips are strong, while meeting rail blocks give added efficiency.

All metal is ample in width so as to be kerfed wherever possible.

For In-opening Casements—Interlocking

Equipment 300 is a most efficient weather strip for this type of window. At the hinge and latch sides the interlocking weather strip seal is placed to check wind-driven rain as far to the outside as possible. This outside interlocking equipment meets the unusual demand for protection against heavy water leakage. It is efficient against air and dust leakage as well.

Rain drips and astragals are a part of the installation of all Chamberlin casement equipments.

For Out-opening Casements—Interlocking and Spring Bronze

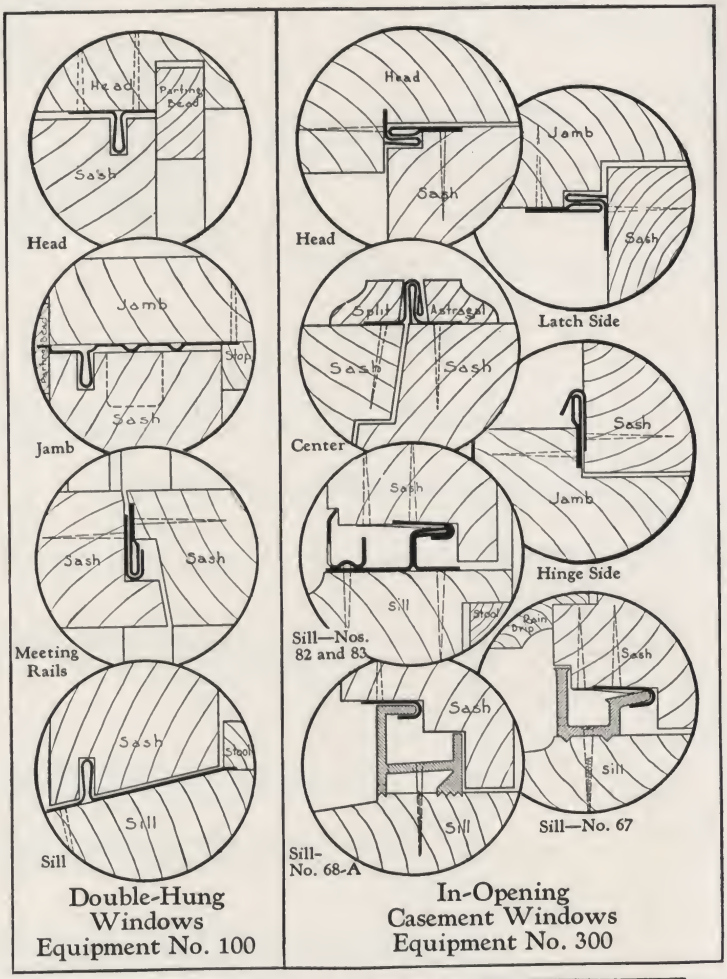
Equipment 500, for out-opening casements, forms a strong interlocking seal against rain and air leakage. Should be used particularly when windows are set flush with outside walls.

For Outside Doors—Interlocking

Equipment 800 with interlocking weather strips is unquestionably a superior equipment for doors. Zinc can be used but for sake of appearance cold-rolled bronze is preferable. Equipment 800 is recommended in cold-rolled bronze. All door installations include a Sill-Dor-Seal, an interlocking brass threshold for sill. For rear and side entrance doors, Nos. 869 or 869-A are recommended; for front entrance doors, wider sills are used.

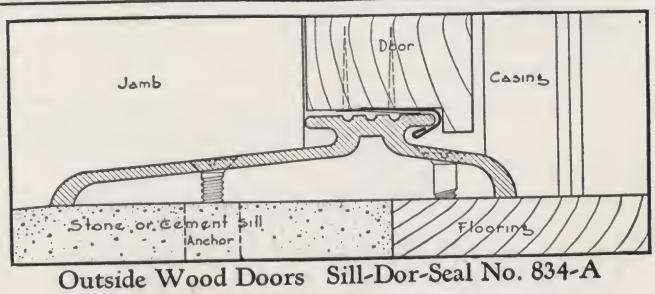
Automatic Door Bottoms—In-Dor-Seals

Silent acting, automatic, ingeniously hidden in the bottoms of doors, they do not interfere with rugs, mats, runners or carpets. A thick but soft piece of felt is lowered an instant before the door is entirely closed and is raised an instant after the door opens. They are mechanically correct. Needed on bedroom, bathroom, kitchen, basement, closet and attic doors. Also in schools, dormitories, hospitals, hotels and private offices.



Double-Hung Windows Equipment No. 100

In-Opening Casement Windows Equipment No. 300



Outside Wood Doors Sill-Dor-Seal No. 834-A

Sill-Dor-Seals—Interlocking Brass Thresholds

Can be securely fastened or anchored to either wood, stone or metal sills so as to interlock with a hook when doors are closed. Whether interlocking or spring bronze is used at head and sides a hook and a Sill-Dor-Seal is used at the sill.

THE DIAMOND METAL WEATHER STRIP CO.

COLUMBUS, OHIO

FACTORY BRANCHES

COLUMBUS, OHIO · BOSTON, MASS. · CINCINNATI, OHIO · WHEELING, W. VA. · OMAHA, NEB.

Diamond Dealers Are Located in Principal Cities of the United States

GUARANTEED PROTECTION WITH DIAMOND METAL WEATHER STRIPS

A Weather Strip for Every Requirement

We manufacture over 100 different metal weather strips of zinc, copper, spring bronze, brass and aluminum. We do not believe that one type of weather strip can meet all requirements, and therefore add new strips as they are developed for specific needs.

PRACTICAL THE DIAMOND WAY METAL WEATHER STRIPPING

TRADE-MARK
(Reg. U. S. Pat. Off.)

Flexibility and Removability—Diamond Metal Weather Strips are so made as to prevent sticking and binding, caused by the warping, swelling and shrinking of sash, and by the swelling of parting stops.

They also are made so that, if necessary, double hung windows may be removed easily.

Diamond Calking Compound

Window and door frames seldom fit snugly against brick, stone or frame walls, and consequently soot and water filter in, soiling drapes and wall paper. Diamond Calk forced in the crevices leaves an elastic watertight seal.

Advantages of Weather Strips

Diamond Metal Weather Strips cut fuel bills 20% to 40%; reduce cleaning bills; protect health by permitting proper ventilation without dangerous drafts; eliminate window rattle; deaden the noise of outside traffic; allow windows always to open and close freely.

Service

Guaranteed installations are available all over the United States by our 500 licensed dealers. All material is applied by skilled mechanics under the personal supervision of these dealers who will gladly furnish estimates on any work you may have.

Write to the home office for the address of the man near you. If no dealer is in your vicinity, we can supply material for your jobs with installation instructions. Shipments are made immediately on receipt of orders.

A practical Engineering Department is maintained for solving difficult problems in weatherstripping. Blue print details and descriptive circulars are furnished to architects and builders on request.

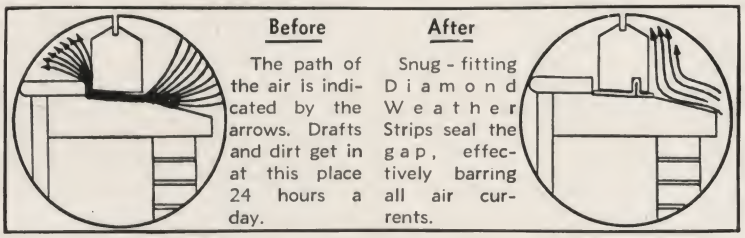
Manufacturing Facilities

This company has been manufacturing and installing weather strips for nearly 25 years. The plant is equipped with special machinery to produce accurately a finished product in large volume. A high standard of efficiency is maintained both in the manufacture and installation.

Guarantee

All Diamond Metal Weather Strips are unconditionally guaranteed against defects in workmanship and materials for the life of the building in which they are installed.

Thousands of buildings in the United States and Canada have been equipped with our products. A list of installations is yours for the asking.

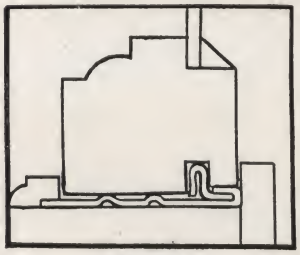


Before

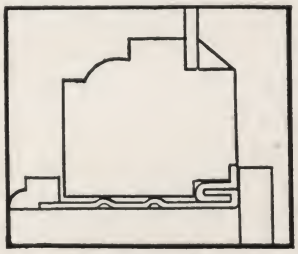
The path of the air is indicated by the arrows. Drafts and dirt get in at this place 24 hours a day.

After

Snug-fitting Diamond Weather Strips seal the gap, effectively barring all air currents.



Rib Type

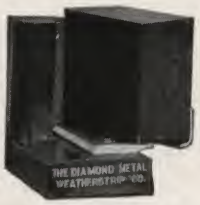


Interlocking Type

Diamond Corrugated Flexible Strip

The New Diamond Corrugated Flexible Strip for double hung windows, illustrated below, combines the outstanding advantages of the popular Diamond Equipment, namely flexibility and removability, with the well-known advantages of the corrugated strip, namely ease of sliding and triple contact. This strip is usually installed as a rib strip, but can be installed as an interlock giving metal to metal contact if required. The strip itself is the same in either case, the installation alone is different.

Insure your client permanent satisfaction by specifying this new Diamond Weather Strip.



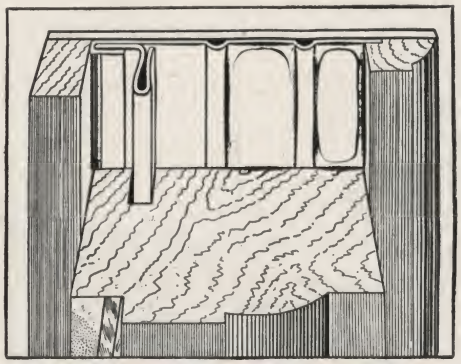
Brass Sill Plate for Doors

Specifications for Diamond Weather Strips

All exterior wood windows and doors shall be equipped with weather strips as manufactured and installed by THE DIAMOND METAL WEATHER STRIP COMPANY or its authorized dealer.



Waterproof Channel Casements



New Diamond Corrugated Flexible Strip



Removable Feature of Diamond Flexible

MASTER METAL STRIP SERVICE, INC.

1720 North Kilbourn Avenue
CHICAGO, ILL.

Master Weatherstrip Contractors are located in Principal Cities of the United States

Products

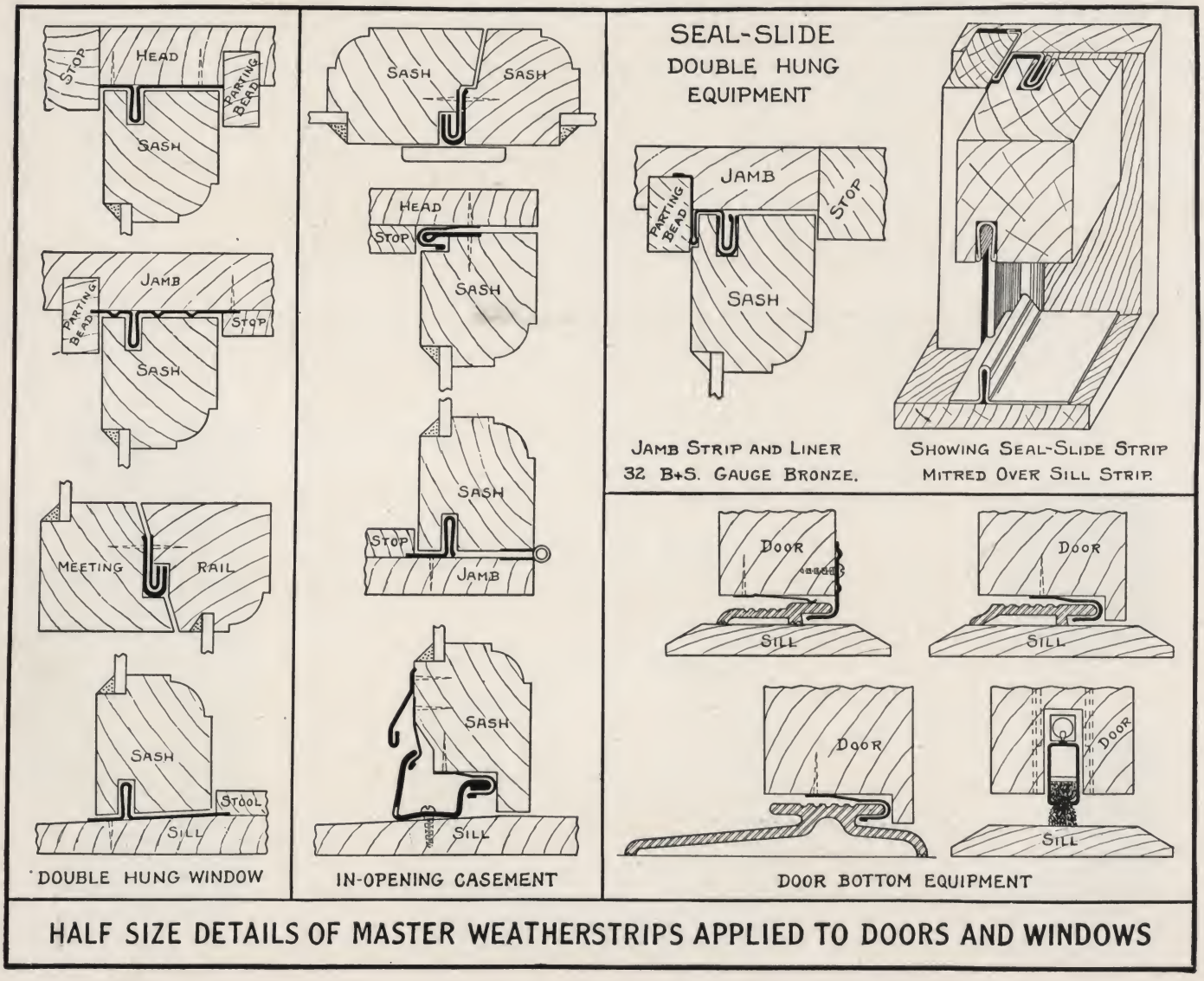
WEATHERSTRIP EQUIPMENT for practically all types of wood or metal windows and doors. MASTER SEAL-SLIDE self-adjusting weatherstrips for double hung windows (patent pending). CALKING COMPOUNDS, also calking tools. METAL SCREEN GUIDES of various types. ALUMO WEATHERSTRIP TOOLS. H. S. STEEL CUTTERS for electric grooving machines. CHECK RAIL DUST BLOCKS. SPECIAL STRIPS of every description manufactured to order.

Specification

Double Hung Windows—All exterior double hung windows to be equipped with Master Zinc [Cold Rolled Bronze] Weatherstrips, as manufactured by the MASTER METAL STRIP SERVICE, INC., and in accordance with details shown in SWEET'S ARCHITECTURAL CATALOGUES.

Casement Windows—All exterior in-opening casements to be equipped with zinc [brass] watertight bottoms, zinc interlocking [spring bronze] strips on top and sides, as manufactured by the MASTER METAL STRIP SERVICE, INC., and in accordance with details shown in SWEET'S ARCHITECTURAL CATALOGUES.

Doors—All exterior doors to be equipped with Master Brass Threshold, zinc interlocking [spring bronze] strips on top and sides, as manufactured by the MASTER METAL STRIP SERVICE, INC., and in accordance with details shown in SWEET'S ARCHITECTURAL CATALOGUES.



HALF SIZE DETAILS OF MASTER WEATHERSTRIPS APPLIED TO DOORS AND WINDOWS

THE MICHAELS ART BRONZE COMPANY

Orna-Metal Craftsmen Since 1870

235-241 Court Avenue
COVINGTON, KY.

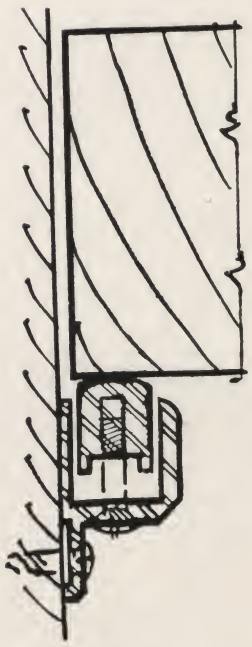
(Three minutes from the heart of Cincinnati, Ohio)

REPRESENTATIVES IN PRINCIPAL CITIES

For our pages on Ornamental Bronze and Iron and Store Front Construction, see Manufacturers' Index

MICHAELS BRONZE AND WHITE METAL PATENTED ASTRAGALS

U. S. Patent No. 1841868

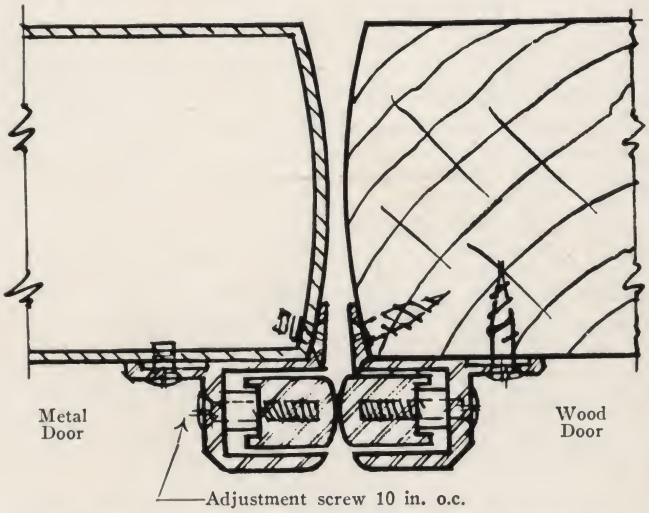


Type "A" Surface Astragal Used as Stop Bead

The system of weather-stripping shown on this sheet has long been in demand, and was designed with the thought of compensating the expansion and contraction of doors, and to close as near as possible a door of any type, to prevent draught, air currents and keep out dirt and dust. It is very simple, practical and sturdy and is easily adjusted, if necessary.

Michaels adjustable astragals, stop bead or drip member can be used on wood or metal doors. Can be applied to old doors that have sagged or shrunk out of proper alignment to take up any variation of space so as to create an equal "hairline" space the full height of door and allows expansion and contraction.

The spring tension on the adjustable member makes this an ideal weather seal, thus saving considerable on radiation costs exclusive of fuel costs.



Type "A" Surface Astragal Applied to Wood and Hollow Metal Roundel Doors

May also be applied as stop bead, or at bottom of door as sealing strip or drip

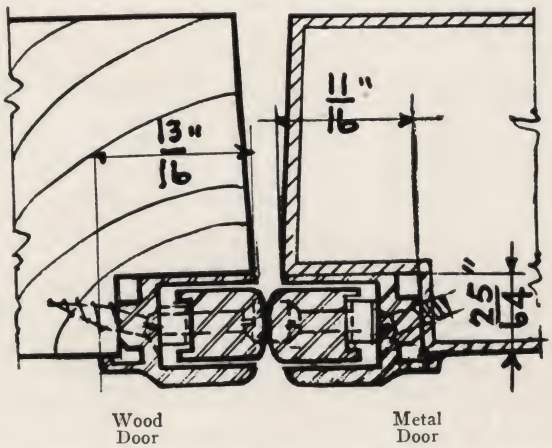
Construction Features

Made of extruded bronze or nickel, and constructed of two members, operated and adjusted by special spring and screws located approximately 10 ins. on center. The special adjusting screw has two small lugs under the head which mesh into corresponding grooves on the Astragal preventing the screw from moving by vibration.

Drawings showing application and various types furnished upon request.

Specifications

All doors where specified on drawings or detailed, shall be equipped with extruded Adjustable Astragal and Weather-strip having a permanent yieldable edge, with oil tempered enameled steel spring and adjusting screw having special head to prevent member from becoming out of adjustment.



Type "D" Countersunk Type for Use on Wood and Hollow Metal Bevel Doors

All astragals, stop beads, drip members are applicable for either out or in swinging doors

MONARCH*—METAL WEATHERSTRIP CORPORATION

*Reg. U. S. Pat. Off.

GENERAL OFFICE AND FACTORY
5020 Penrose Street, ST. LOUIS, MO.
EASTERN SALES SERVICE
MONARCH METAL WEATHERSTRIP CO. OF NEW YORK, 41 Murray Street, NEW YORK, N. Y.
150 CERTIFIED REPRESENTATIVES THROUGHOUT THE UNITED STATES

Monarch Metal Weatherstrip

A weatherstrip with guaranteed performance, manufactured for practically every type of wood or metal windows and doors. Made from the highest grades of materials obtainable, such as cross grained sheet zinc, rolled or extruded brass or bronze of our own factory tested specification. The precision machinery that is used in the manufacture of all Monarch Metal Weatherstrip has eliminated the possibility of having to depend alone upon the skill of the installation mechanic.

MONARCH METAL WEATHERSTRIP *Controls the Air*
TRADE-MARK

Patents—Attention is called to various Monarch Metal Weatherstrip Equipments that are protected by United States Patents.

Efficiency

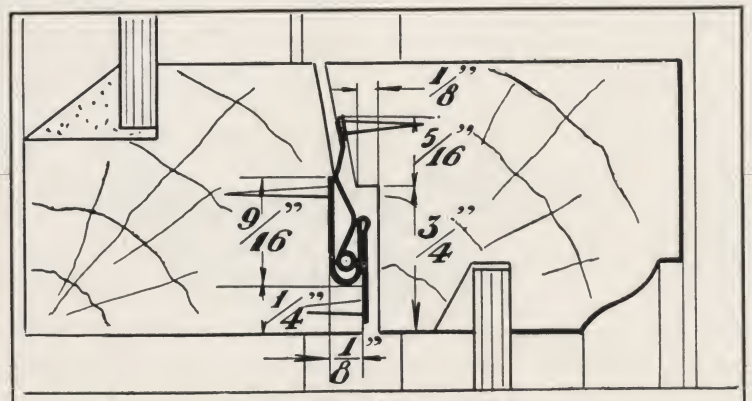
The efficiency of Monarch Metal Weatherstrip has been determined by various outside unbiased authorities. Air leakage tests have proven Monarch Metal Weatherstrips have no superior in efficient air retardant attachments for windows and doors. Based on these accurate scientific tests, Monarch Metal Weatherstrips are sold on a definite guaranteed maximum leakage expressed in terms of cubic feet of air per hour, per foot of crack, per mile of wind velocity.

Service to Architects and Engineers

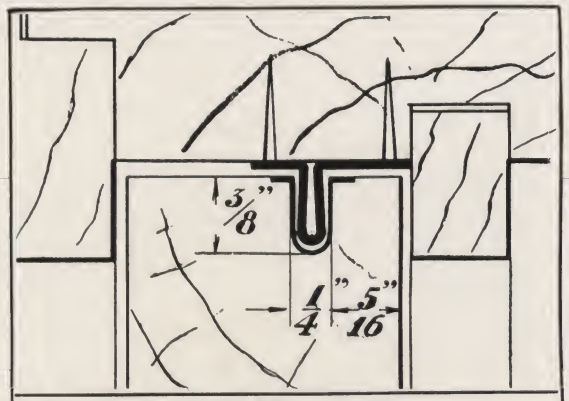
Monarch representatives are specially trained to prepare heat loss reports from plans as a guide to heating engineers, or to measure cracks and clearances in standing buildings and determine heat losses and the consequent fuel economies. This service to architects can be rendered at more than 150 points in the United States.

Guarantee

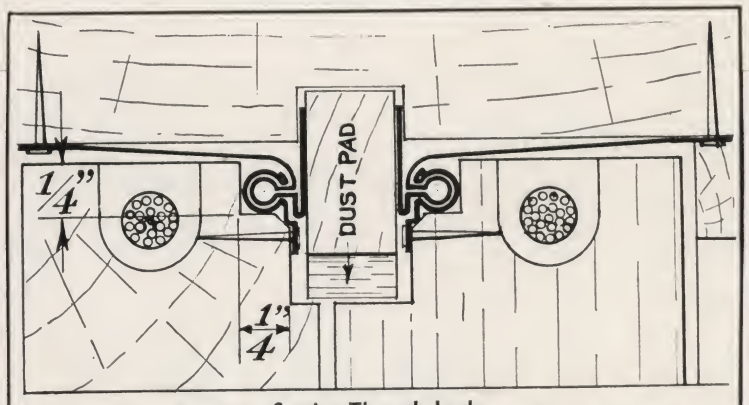
Infiltration as determined by laboratory tests, as well as workmanship and material, in all installations, are unconditionally guaranteed by the MONARCH METAL WEATHERSTRIP CORPORATION.



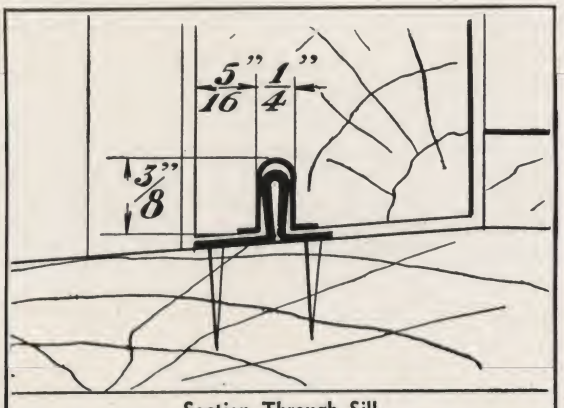
Section Through Meeting Rail
Two bronze interlocking members fabricated from the highest grade of material available



Section Through Head
Two zinc interlocking members cut cross grain to provide added strength and prevent splitting



Section Through Jamb
Two zinc interlocked members that are self-adjusting to shrinking
Patent No. 1,875,173—August 30, 1932



Section Through Sill
Two zinc interlocking members cut cross grain to provide added strength and prevent splitting

Maximum Certified Air Leakage—0.486 cu. ft. of air per hour, per foot of crack, per mile wind velocity

FULL SIZE DETAILS—DOUBLE HUNG WINDOW

Showing Application of Monarch Two-member Self-adjusting Weatherstrip Equipment No. 400

REPRESENTATIVE MONARCH METAL WEATHERSTRIP EQUIPMENTS

Over 125 different types to meet practically all conditions



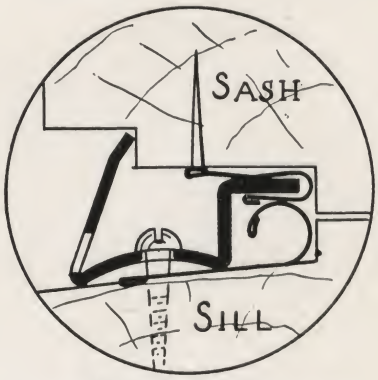
No. 39 and 47—Interlocking Monarch bronze equipment for in-opening casements, lock side and head.



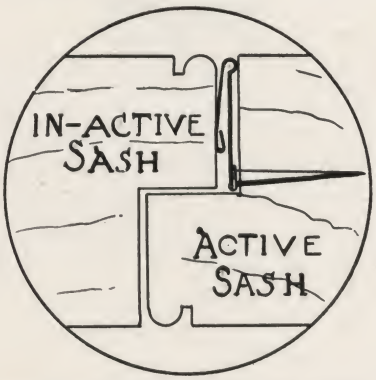
No. 147 and 149—Interlocking Monarch bronze equipment for in-opening casements, hinge side.



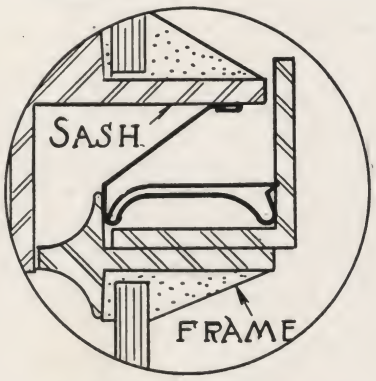
Patent No. 1,530,777
No. 155A—Three-point contact extruded brass sill for in-opening casements.



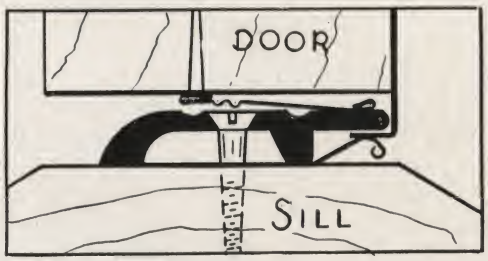
Patent No. 1,530,777
No. 115A—Three-point contact rolled brass sill for in-opening casements.



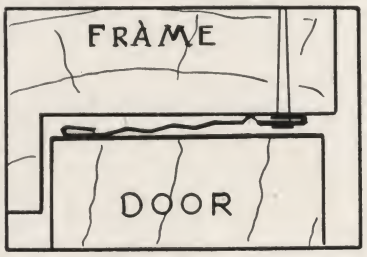
No. 133—Monarch cushion bronze equipment for rabbeted meeting stiles of doors and casements.



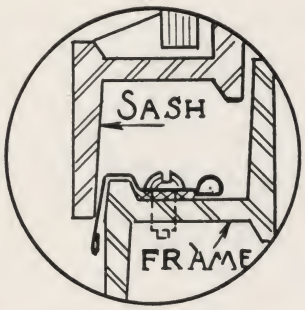
Patent No. 1,584,309
Monarch steel window equipment for center pivoted sash.



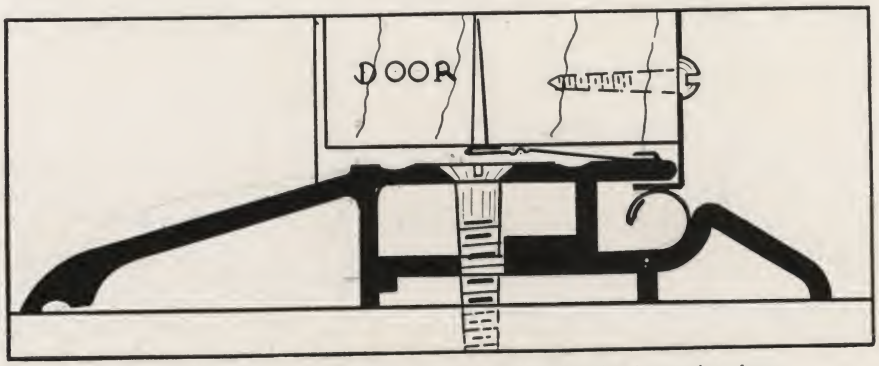
Patent No. 1,530,777
No. 175A—Three-point contact extruded brass sill for in-opening doors.



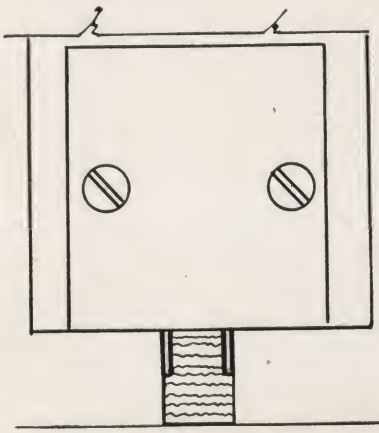
Patent No. 1,781,382
Monarch exclusive angular fluted bronze — to overcome vibration — for doors and casement windows.



Patent No. 1,781,400
Monarch outside contact equipment for steel casements



No. 187A—Three-point contact extruded brass sill for in-opening doors
Patent No. 1,530,777



No. 293—Monarch automatic drop bottom

FULL SIZE DETAILS

REESE METAL WEATHER STRIP CO.

112 South 10th Street
MINNEAPOLIS, MINN.

PRODUCTS

REESE FLEXO-SEAL EQUIPMENT for double hung windows (patented and patents pending).

REESE ADJUSTO-SEAL EQUIPMENT—self-adjusting interlocking equipment for casements and doors (patented).

500 SERIES FLEXO-SEAL EQUIPMENT for steel windows, hinged, projected, or pivoted (patented).

EXTRUDED BRASS THRESHOLDS—spring bronze, waterproof casement equipment.

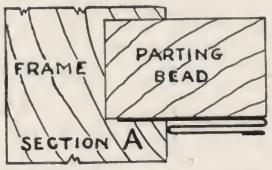
REESE PLASTO-SEAL CAULKING COMPOUND.

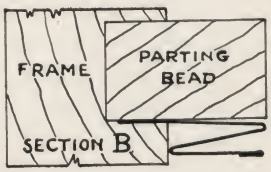
FLEXO-SEAL EQUIPMENT

Features

1—Section through Lower Sash Stile and Jamb, showing the flexible, accordion-like, Flexo-Seal frame member interlocked with sash member. A continuous seal past sash cord slots. Full ½-in. interlocking contact with sash against jamb—that is, nearly double the usual adjustment for sash shrinkage. The flexible accordion-like member readily *yields* to the pull of a warped sash, conforming to its bowed surface without damage to the weatherstrip and without loss of efficiency. Because of this exclusive feature these members are made to fit with machine precision, more closely than in any other weatherstrip installation. Observe the length of air travel necessary for cold air to get through this contact.

Reese Flexo-Seal METAL WEATHER STRIP ask your architect



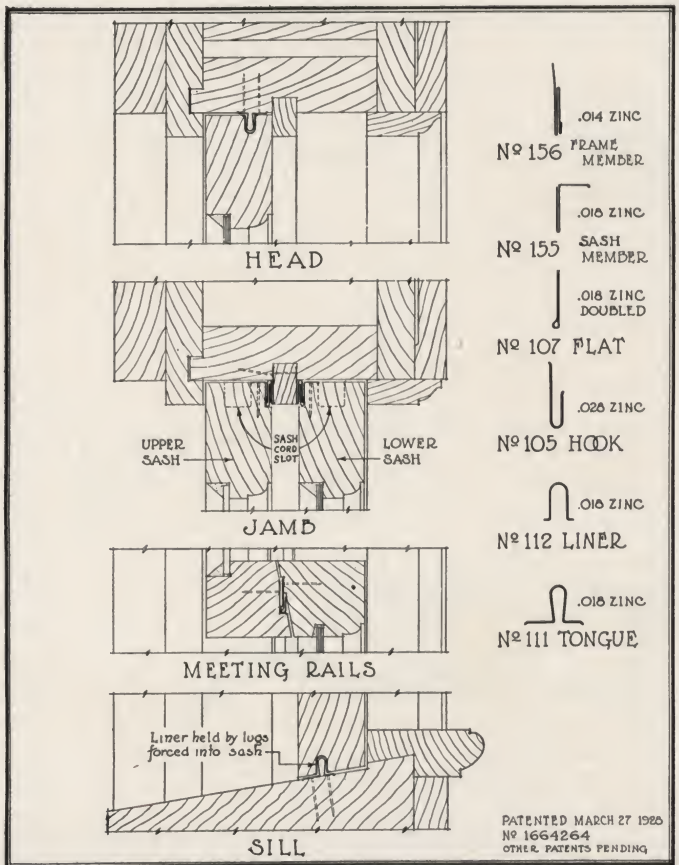


2—Section through Upper Sash Stile and Jamb, showing the flexible frame member wedged tightly between parting bead and frame and deep resilient contact with sash member. It is important to note that not only is the flexible frame member wedged tightly into the frame by the parting bead, but that the edge of the nailing flange on the sash member is turned in to hug the wood tightly between nailing. The nailing of this member is at right angles to the strain caused by warpage, so that warpage cannot pull either member out of proper position or loosen them up, thus permitting leakage behind the strips.

3—Section through Bottom Rail and Sill, showing turned flanges of sill strip, gripping the sill between nails, and interlocking with smooth fitting liner in sash rail.

4—Section through Meeting Rail, showing the trouble-free Flexo-Seal meeting rail equipment. Sturdy members, accurately made and properly fitted in sash, avoid buckling due to sash warpage and consequent interference in closing sash.

5—Section through Top Sash Rail and Head of Frame, shows the same members as used on the sill. The liner in the top rail provides a smooth and close fitting engagement with the head frame member.



Accordion Action

The most distinctive feature of Flexo-Seal Equipment, and that most responsible for the remarkable ease of sash operation, combined with maintenance of high efficiency in the years after installation, is the flexibility or accordion action of the frame member No. 156.

Section A shows the position of this member when the sash is straight. Section B shows how the frame member yields when the sash warps away from the parting bead. Because of this yielding action of a strip *designed to yield,* we produce the interfitting members with a closer fit one with the other and obtain ease of sash operation under conditions which in ordinary weather strips require either oversize grooves, opening up of one interlocking member, or else produce excessive friction and binding action in the weather strip. A weather strip may look like Flexo-Seal, but this desirable feature of accordion-like flexibility is found only in Flexo-Seal equipment.

Specification for Flexo-Seal

All double hung windows shall be equipped with Reese Flexo-Seal Equipment, as applied by the manufacturer or his authorized dealer. Jamb strips shall have ½-in. interlocking contact with sash against jamb to amply allow for sash shrinkage, and the design shall permit easy sash operation in case of warpage of sash ⅛ in. out of plane surface. Meeting rail, head, and sill shall have two-piece interlocking members.

Unless otherwise specified, all members shall be made of sheet zinc cut across grain, and of thickness specified in published details.

Alternate for Flexo-Seal in Bronze: All members shall be cold rolled from commercial bronze of thicknesses specified in published details.

500 SERIES FLEXO-SEAL EQUIPMENT

(Patented)

For Steel Windows—Hinged, Projected, or Pivoted

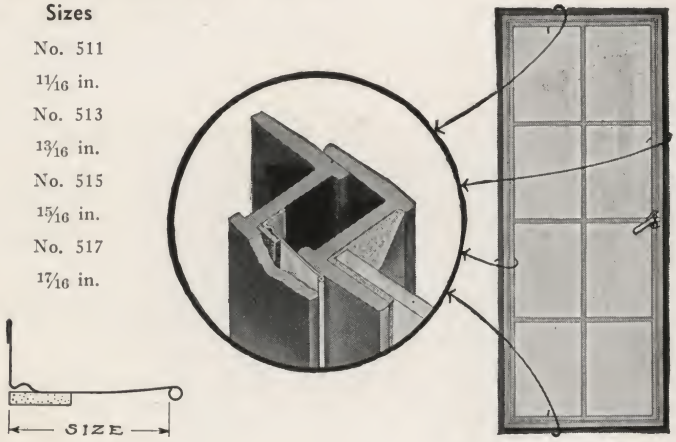
Flexo-Seal Metal Weather Strip provides a flexible adjustable seal between the stationary frame and the sash in steel windows. Attached permanently in the recess out of sight and harm, Flexo-Seal provides a thin, softly yielding, impenetrable, and permanent cushion between the fixed and movable members. If the crack between these members is enough to accommodate two thicknesses of ordinary newspaper it is more than enough to permit installation of Flexo-Seal equipment without binding. If the cracks around your window are no greater than this, air leakage is negligible.

In economy of heating costs Flexo-Seal Equipment quickly returns its cost and pays constant dividends on the investment.

Flexo-Seal Equipment is shown attached to the fixed portion of a typical steel casement window. The closing sash causes the bronze weather strip to seat more firmly on the felt cushion at the base of the weather strip and in turn warps the free tongue of the weather strip into snug fitting engagement with the closing sash.

Sizes

No. 511
1 1/16 in.
No. 513
1 3/16 in.
No. 515
1 5/16 in.
No. 517
1 7/16 in.



ADJUSTO-SEAL EQUIPMENT

(Patented)

A True Self-adjusting, Interlocking Equipment for the Jamb and Heads of Casements and Doors

A Permanent Self-adjusting Seal

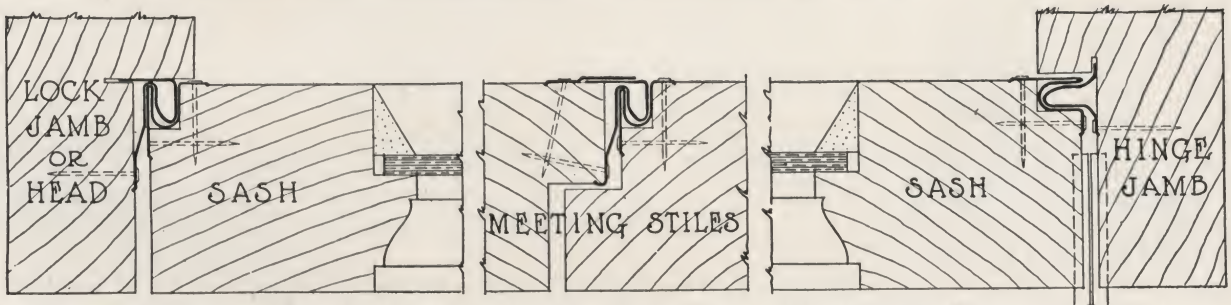
Adjusto-Seal Equipment is made only of rust-free materials of low (not spring) temper, either zinc or bronze. The design is such that the interlocking contact is preserved without change regardless of the shrinking or swelling of the sash.

Observe the wide mouth of the frame member on the lock side, its cam surfaces shaped to pull the member automatically into proper alignment if its position should be moved through any cause while the sash is open.

Specification for Adjusto-Seal

Sides, tops, and meeting stiles of all casement windows (and doors) shall be equipped with Reese Adjusto-Seal Equipment. Frame member on hinge jamb shall be kerfed to form air and water seal continuous past butts, and shall be formed with outer radius to interlock with sash member. Frame member on lock jamb and head shall be self-adjusting to shrinkage of sash, kerfed into frame for air and water-seal. Sash members shall be double-nailed at right angles to prevent pulling loose on nails. Both frame and sash members shall be continuous past locks.

Note: Unless otherwise specified, Adjusto-Seal Equipment will be furnished in zinc. If desired of bronze, add to above specification: "All members shall be furnished of cold-rolled commercial bronze; Nos. 65 and 68, .018 in. thick; No. 66, .014 in.; No. 67, .028 in. thick.



No. 65—Sash Member
No. 66—Frame Member

No. 65, No. 66 and **No. 67**—Astragal Strip
Prefix above numbers BR for bronze strip

No. 65—Sash Member
No. 68—Frame Member

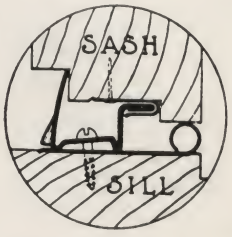
CASEMENT AND DOOR SILL EQUIPMENT

For Inswinging Sash

(Patented)

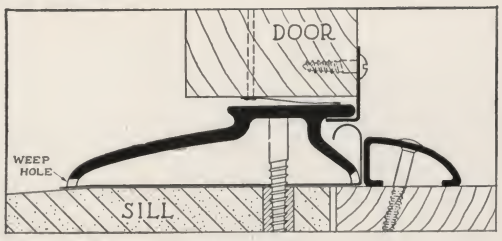
Any Thickness

Either Zinc or Bronze



No. 241—Rolled Trough
No. 242—Sash Hook
No. 243—Base

No attempt has been made to show our complete line of extruded or formed sill constructions for doors and casement windows. We would be glad to send our recommendation and details for suitable equipment for both standard and special conditions, not only in door and casement constructions but for any type of opening of either wood or metal.



(Patented)

No. 368—Extruded Brass Sill 3x1 3/8 in.
No. 370—Brass Drainage Strip
No. 371—Drawn Brass Moulding 1x1/2 in.
No. 313—Brass Surface Door Angle

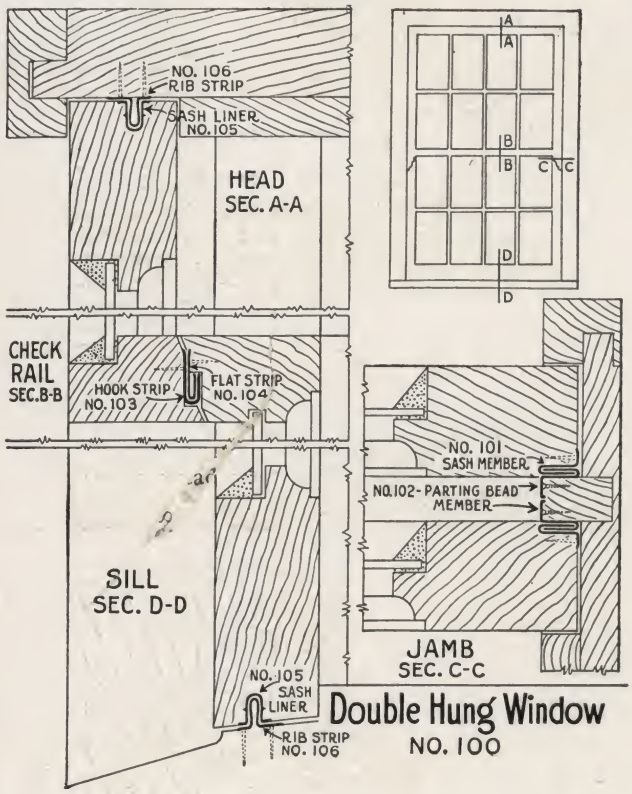
A. J. SPANJERS CO.

Manufacturers of Double Seal Metal Weatherstrip and "Bed-Dor-Seals"

82 Tenth Avenue, N. E.
MINNEAPOLIS, MINN.

SPANJERS DOUBLE SEAL INTERLOCKING WEATHERSTRIPS

Spanjers Double Seal Interlocking Weatherstripping is made of heavy, flexible cross-grain zinc in channel shape interlocking to form an airtight, dustproof *double seal.* It is designed to take up any shrinkage between frame and sash and maintains maximum efficiency in withstanding the elements.



Double Hung Window NO. 100

Adaptability

It is designed for use on double hung windows, casement windows and doors. Every movable joint is provided with windproof airtight connecting members.

Double Hung Windows—Are equipped with double member weatherstrips, flexible and seating perfectly as the joining members meet. Note in the drawing below that there are no deep grooves to weaken either the sash or frame.

In-swinging Wood Casements—Are equipped with zinc interlocking and No. 25 zinc channel bottom. Can also be furnished in brass and bronze.

Out-swinging Wood Casements—Are equipped with hemmed edge bronze and No. 20 zinc interlocking bottom and also in concealed interlocking.

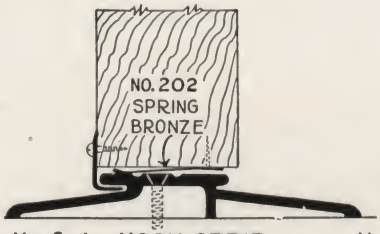
Doors—Exterior wood doors are equipped with hemmed edge bronze and various widths of interlocking and plain thresholds.

Special Equipment

We specialize in furnishing special equipment to meet your requirements.

Installation

Realizing the necessity for correct weatherstripping installations, the A. J. Spanjers Co. undertakes to supervise the installation of its products and to guarantee the weatherstripping and calking of all frames.



No. 6 - L. HOOK STRIP
No. 5 - THRESHOLD



No. 8 - CONCEALED HOOK
No. 9 - THRESHOLD

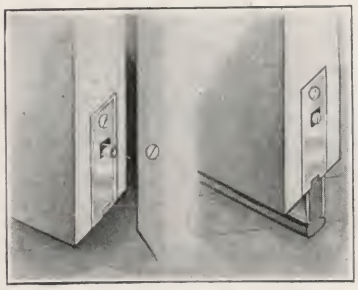
"BED-DOR-SEALS" FOR BEDROOM DOORS

Closes the Space Between Door and Floor

This is a fully automatic, noiseless device which operates on the adjustable plunger rod and leaf spring principle, greatly simplified and improved. All the complicated mechanism of the old type has been dispensed with, resulting in a trouble-free device, that will operate satisfactorily for years.

Superior Features

Metal Liner—Made of heavy cross-grained zinc flanged to make a finished appearance in bottom of door.



Door Open Door Closed

Seal—Made of heavy cross-grained zinc with inside core of part wood. This combines lightness with greater strength.

All Wool Felt—Highest quality and vermin proof.

Leaf Spring—Oil tempered spring steel of finest quality. Will retain its flexibility indefinitely.

Plunger Rod—Threaded and accurately machined to permit of accurate and fine adjustment of seal.

Rustproof—All metal parts are rustproof—will not corrode.

No Interference with Rugs—"Bed-Dor-Seals" do not operate until door is just two inches from being closed. Side nearest hinge drops first so there is no scraping of the felt along the floor. There is no possibility of interference with rugs.

Better Finished Appearance—Brass plates are furnished for both ends of doors as seen in illustration.

Fitted Quicker — Installation Costs Less — "Bed-Dor-Seals" can be fitted quicker and easier than other types. Only 3 small screws to be inserted after groove is cut. No chiseling for plunger box or clearance for spring or rod. Just a straight groove to be cut.

Operates Easily and Surely—Cannot stick. Device operates inside metal liner with smooth metal-to-metal contact. No jagged edges. Will operate indefinitely without trouble.



Cross Section Through Door

MENEELY BELL CO.

220 Broadway
NEW YORK, N. Y.
TELEPHONE COrtlandt 7-1749

22-28 River Street
TROY, N. Y.
TELEPHONE Troy 525

Bells

Church, Chime, Peal, Angelus, School, Tower Clock, Westminster, Fire Alarm, Fog Signal, Ship, Farm, and other Bells.

The accompanying illustrations show a few of the principal bells manufactured by this company.

WEIGHTS, TONES AND SIZES OF CHURCH BELLS

Bell			Mountings		
Weight, lbs.	Medium tone	Diameter, in.	Size of frame outside ft.	in. ft.	in.	Diameter of wheel ft.	in.
400	D	27	3	5x3	8	4	4
450	C sharp	28	3	5x3	8	4	4
500	C	29	3	5x3	8	4	4
600	C	31	3	8x3	11	4	9
700	B	33	3	11x4	2	4	9
800	B flat	34	3	11x4	2	5	6
900	A	36	4	2x4	6	5	9
1000	A	37	4	2x4	6	5	9
1200	A flat	39	4	8x4	9	6	3
1500	G	42	4	10x4	10	6	6
1800	F sharp	45	5	5x5	7	7	0
2000	F	46	5	5x5	7	7	0
2500	E	50	5	9x6	0	7	0
3000	E flat	53	6	4x6	8	7	8
3500	D	56	6	4x6	8	7	8
4000	C sharp	58	7	4x7	2	8	6
4500	C	61	7	4x7	2	8	6
5000	C	63	7	4x7	2	8	6
6000	B	67	7	4x7	2	8	6
7000	B flat	69	8	11x9	2	9	6



Peal Bells

Electrically Operated Chimes

Electrically equipped chimes played by church organist from small keyboard placed near organ console.





Tower Clock Bell



Chime Bells and Keyboard



Church Bell



School Bell

ESTABLISHED BY ANDREW MENEELY IN 1826 INCORPORATED 1908

THE OLD MENEELY BELL FOUNDRY

MENEELY & COMPANY (INC.)

WATERVLIET, N. Y.

Meneely Bells Are Scientifically Made to Insure Definite Tone Harmony

Between 1890 and 1895 we made the important discovery that the tone elements of bells could be accurately and absolutely determined with the aid of specially designed instruments, and that such bells, when intended for musical sets (chimes, peals and carillons) could be musically harmonized in themselves and with each other by mechanical processes and methods of testing. The results thus obtained are embodied in our bells.

While this is the oldest bell foundry in the country, it is the most modern in its practices, mechanical equipment and scientific and special appliances necessary for the best workmanship and the definite determination of exact musical results.



Typical Church Bell

SIZES OF MENEELY BELLS

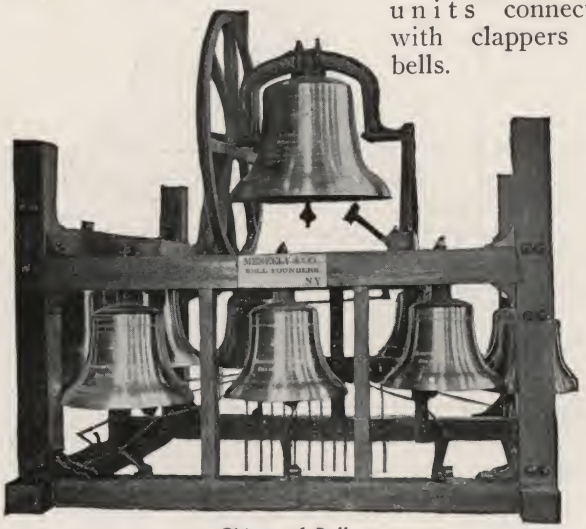
Bell			Mountings	
Weight, lb.	Tone	Diam., in.	Size of frame outside	Diam. of wheel
400	E♭	27	3′6″ by 3′5″	4′
500	D	28	3′6″ by 3′5″	4′
600	D♭	30	3′6″ by 3′9″	4′4″
700	C	32	3′6″ by 3′9″	4′4″
800	B	34	4′5″ by 4′1″	5′6″
900	B♭	36	4′5″ by 4′5″	5′6″
1050	A	38	4′5″ by 4′5″	5′6″
1250	A♭	40	4′10″ by 4′9″	6′3″
1600	G	42	5′3″ by 5′0″	6′3″
1800	F♯	46	5′8″ by 5′5″	7′
2100	F	48	5′8″ by 5′5″	7′
2500	E	50	5′8″ by 5′5″	7′
3000	E♭	54	6′6″ by 6′3″	7′6″
3500	D	56	6′6″ by 6′3″	7′6″
4200	C♯	60	7′8″ by 7′4″	8′
5000	C	64	7′8″ by 7′4″	8′
6000	B	68	8′0″ by 7′8″	9′
7200	B♭	72	8′0″ by 7′8″	10′

Chimes

A chime consists of 10 to 16 bells corresponding to eight notes of diatonic scale with two or more semitones interposed and one or more bells above the octave.

Electric Chiming Device

Chimes electrically equipped are played from small keyboard placed near organ console. Electric equipment consists of keyboard, contact panel, and electric units connected with clappers of bells.



Chime of Bells

Carillons

A carillon consists of at least 23 bells corresponding to the full chromatic scale, all full tones and semitones, throughout two or more octaves.



Carillon of Bells

A Few Well-known Installations of the Famous Meneely & Co. Bells

The Washington Memorial Chapel, Valley Forge, Pa.	Carillon	Mission Church, Roxbury, Boston, Mass.	Chime
Cornell University Library, Ithaca, N. Y.	Chime	St. Paul's Cathedral, Buffalo, N. Y.	Chime
Greater University of Rochester, Rochester, N. Y.	Chime	Church of the Epiphany, Washington, D. C.	Chime
Connecticut Agricultural College, Storrs, Conn.	Carillon	Church of Bethesda-by-the-Sea, Palm Beach, Fla.	Chime
Trinity Reformed Church, Philadelphia, Pa.	Carillon	State Teachers College Campanile, Cedar Falls, Iowa	Chime
St. Michael's Episcopal Church, New York, N. Y.	Chime	St. James' Episcopal Church, Danbury, Conn.	Carillon
St. Peter's Cathedral, Erie, Pa.	Chime	St. Andrew's Episcopal Church, New York, N. Y.	Chime
University of Washington, Seattle, Wash.	Chime	St. Simeon's Episcopal Church, Philadelphia, Pa.	Chime

THE I. T. VERDIN CO.

Manufacturers of Automatic Bell Ringers and Motor Driven Tower Clocks Illuminated and Special Dials for Tower Clocks

123-125 Broadway
CINCINNATI, OHIO

BRANCH OFFICES
NEW YORK, N. Y., 305 Broadway
CHICAGO, ILL., 6156 Vernon Avenue
NEWARK, N. J., 87 Wright Street

VERDIN AUTOMATIC BELL RINGER

The Verdin system of automatic bell ringing is in use by many of the largest churches and colleges in the United States.

This company specializes in the manufacture and installation of church and school bell ringers; automatic electric bell ringers; swinging electric bell ringers; stationary electric bell ringers for any purpose, such as fire bells, chimes, etc.; Angelus ringers, manual and clock controlled; tollers for funerals; Westminster chime strikers.

Special bell ringers can be constructed for any requirement and information on same will be gladly given.

Verdin electric bell ringers are used for the ringing and tolling of large bells, either clock-controlled or manually controlled from a switch.



Bell with Verdin Automatic Bell Ringer Attached
Also shows the toller connected to bell hammer

Advantages of Verdin Ringers

Electric bell ringers may be applied to old bells that have been installed for many years, or on new bells as may be required. With Verdin equipment no ropes are required to dangle from or through the ceiling.

The control switches may be placed in one or more places as desired, such as the rectory or in the sacristy or the vestibule, so that the bells may be operated without having to enter the church building, or in any location within the church.

The equipment is troubleproof and requires no attention other than that the machinery should be oiled about three times a year.

Due to the use of small motors, consumption of electric current is negligible.

Guarantee

All Verdin equipment is guaranteed against original defects and, furthermore, the equipment is guaranteed to function as represented for a period of five years.

Sizes and Types

No. 1. Bell Ringer will ring bells up to 600 lbs., using ¼ to ½ hp. motor. Dimensions are 45 ins. long, 14 ins. wide, 27 ins. high.

No. 2 Bell Ringer will ring bells up to 2000 lbs., using ⅓ to ½ hp. motor. Dimensions are 50 ins. long, 14 ins. wide, 27 ins. high.

No. 3 Bell Ringer will ring bells up to 4000 lbs., using ½ to 1 hp. motor. Dimensions are 52 ins. long, 15 ins. wide, 30 ins. high.

No. 4 Bell Ringer will ring bells up to 7000 lbs., using 1 to 2 hp. motor and may be arranged to ring larger bells if necessary. Dimensions are 58 ins. long, 14 ins. wide, 30 ins. high.

Angelus and Toller for striking bells up to 7000 lbs. using ¼ hp. motor. Dimensions are 30 ins. long, 14 ins. wide, 16 ins. high.

Complete clock controlled Angelus Striker, striking bells up to 7000 lbs. using ¼ hp. motor. Dimensions 44 ins. long, 16 ins. wide, 23 ins. high.

AUTOMATIC MOTOR WOUND TOWER CLOCKS WITH MOTOR DRIVEN STRIKERS

Verdin Automatic Motor Wound, Motor Striking Tower Clocks, as furnished, represent most practical and efficient installations. The arrangement eliminates use of long cable runs and the tremendous weight used on the old types of clocks. It also eliminates any interruption of the operation of the clock, due to the fact that the time mechanism is operated with a minimum amount of weight, is automatically motor wound, and keeps the clock in operation for a period of eight hours should the power be interrupted. The striking motors operate hour, half hour, chime and Angelus strike, of any type or description. The power used is negligible, and any of these operations are automatically cut out for the period when striking is not desired.

Old installations of any type may be remodeled to use this arrangement. We also motorize any make of tower clock regardless of design.

Verdin Tower Clocks are guaranteed free from material and mechanical defects for a period of five years, and for their timekeeping accuracy. The finest of material is used throughout. These are products developed through the manufacturing of clocks over a period of nearly ninety years.

Consult us regarding any type of installation, from the smallest to the largest. Our experts are at your service.

Dials

Special dials furnished, such as sectional iron and glass for illuminating at night; also any type skeleton dials. Can replace any of the old type wooden dials regardless of size.

THE FEDERAL EQUIPMENT COMPANY

Manufacturers of Mail Boxes

CARLISLE, PA.

FEDERAL LETTER BOXES

Combination Lock with Automatic Throw-off Device

Where Used

Federal Letter Boxes are adaptable in clubhouses, apartments, railroad offices, garages, dormitories, office buildings and all places where a secure mail receptacle is desired.



Description

Federal Letter Boxes consist of a wood cabinet and a cast bronze front (door and frame). Standard cabinets are of quartered oak and are made in the three sizes listed in the table below. A typical 20-nest installation is illustrated.

Standard finish is statuary bronze, but any finish can be furnished to harmonize with other hardware and surroundings.

The woodwork of the cabinet and crown and base mouldings may also be furnished in other wood than quartered oak to match the trim of the room in which the letter boxes are installed.

Other sizes than those listed in the table are obtainable. When specified, the bronze fronts will be furnished with appropriate initials cast on the door.

Boxes may have pin-tumbler instead of combination locks.

Letter boxes can be furnished with opening in rear of pigeon hole, instead of at the top of the bronze door.

Outstanding Features

A few outstanding features of Federal Letter Boxes may be enumerated as follows:

(1) The opening for the deposit of mail is conveniently rounded and smooth. There are no rough edges.

(2) The attractive front is cast bronze with hammered effect.

(3) All edges are clean-cut and beveled.

(4) The panel is of heavy plate glass.

(5) The door fits flush with the frame and being of cast bronze, cannot be sprung open without breaking glass.

(6) The combination lock, *with automatic throw-off device,* is so designed that it automatically throws off or disturbs the combination when the door is opened—thus it cannot be opened a second time unless the combination is known. This protects the absent minded or careless person who may fail to turn his dial after removing mail from the box.

Operation

Federal Letter Boxes provide a convenient receptacle for mail. The mail is deposited through the opening above the door and removed by the box renter operating his combination on the lock and opening the door.

The combination can be changed in a half a minute.



Section of Twenty No. 32 Federal Letter Boxes

DIMENSIONS OF FEDERAL LETTER BOXES (IN INCHES)

Pin tumbler lock No.	Combination lock No.	Outside dimensions			Inside dimensions		
		Height	Width	Depth	Height	Width	Depth
501	261	7¼	11	14*	6¾	10½	14*
502	262	6¼	5½	10*	5¾	5	10*
503	263	6	3⅔	10*	5½	3 1/16	10*

*Depth may be reduced or increased.

A Few Typical Installations

Oberlin College, Oberlin, Ohio
Temple University, Philadelphia, Pa.
University of Delaware, Newark, Del.
University of Florida, Tallahassee, Fla.
Mt. Vernon Seminary, Washington, D. C.
Princeton University, Princeton, N. J.
Duke University, Durham, N. C.
Women's College, University of Delaware, Newark, Del.
University of Rochester, Rochester, N. Y.
State Teachers College, East Stroudsburg, Pa.
McCurry College, Abilene, Tex.
North Carolina College for Women, Greensboro, N. C.
Westminster College, New Wilmington, Pa.
Bucknell University, Lewisburg, Pa.
Johns Hopkins University, Baltimore, Md.
Millersville State Normal School, Millersville, Pa.
University of Illinois, Urbana, Ill.
Carnegie Institute, Pittsburgh, Pa.
Mississippi State College for Women, Columbus, Miss.
Moravian Seminary & College for Women, Bethlehem, Pa.
Lower Merion Junior High School, Ardmore, Pa.
University of Texas, Austin, Tex.
Santa Barbara Club, Santa Barbara, Calif.
Hampton Normal Institute & College, Hampton, Va.
Y. M. C. A., Cleveland, Ohio
Y. M. C. A., Elkins, W. Va.
Central Y. M. C. A., Harrisburg, Pa.

SPECIALIZED EQUIPMENT

PETER CLARK, INC.

Manufacturers of Stage Equipment and Motor Operated Building Equipment

544 West 30th Street, NEW YORK, N. Y.

WESTERN REPRESENTATIVE: Frank R. Eastman, 1773 No. El Molino Avenue, PASADENA, CAL.

Products

STAGE EQUIPMENT and MOTOR OPERATED BUILDING EQUIPMENT as described below.

Also Stage Lifts; Movable Stage Band Cars; Movietone Horn Towers; Mechanical Stage Effects; Metal Ticket Racks and Cases; Piano Trucks, Platform Lifts; Theatrical Iron Work; Stage Floor Traps; and Portable Ballroom Floors.

Guarantee

All equipment and effects are sold with a full guarantee that any defects in material or workmanship will be promptly rectified.

Architects' Service

We maintain an engineering department organized to help with your problems. Our engineers, at your disposal without charge, will lay out the stage rigging, plans and gridiron, paying particular attention to unusual conditions that may be presented.

Orchestra Pit Lifts

For featuring orchestra numbers. The entire floor of the orchestra pit is the platform of a multiple screw lift. The orchestra lift is electrically driven and automatically controlled by push buttons, from one or more points. The machinery is operated by one motor; it is worm gear driven and is ball bearing throughout.

Organ Console Lifts

Similar to orchestra pit lifts, platform is only large enough to hold console and usually is single screw. Electric operation—automatic control.

Asbestos Curtains

Flexible asbestos fire curtains of plain or woven wire cloth. Asbestos cloth curtain with rigid steel frame, has a layer of cloth on both auditorium and stage side of curtain. Curtains rigid so that they descend under their own weight.

Soundproof and Steel Fire Curtains

Used in schools to separate gymnasiums from auditoriums. Have a sheet steel center covered on both sides with sound resisting material. Have a structural iron frame covered on both sides with asbestos cloth. Fire resisting.

Curtain Hoists

Hand operated for small curtains, placed in gridiron. Electric hoists for larger curtains. Two types, one for installation in gridiron and the other for installation in basement under stage. All hoists, whether hand or electric, are designed so that curtains can descend under their own weight.

Contour Curtain

New type of automatically controlled act curtain. This curtain will give any drape effect desired.

Draw Curtain Tracks

Two types: Steel track, wood lined with lignum vitae ball slides and steel track with rubber-tired carriages. Tracks are noiseless and dustproof, and are designed for the easy hanging of curtains.

Electric Draw Curtain Control

Smooth running machine enabling the operation of curtain from any desired points.

Magnascope Picture Sheet Frames

Steel picture sheet frames with automatic maskings so that two or three sizes of picture can be shown on the same sheet. Also steel frame for picture sheets. These frames carry permanent masking. Provision is made for mounting speaker horns on frame.

Stage Rigging and Hardware

A complete line of stage accessories embracing every appliance needed for the modern stage. Catalogue on request.

Counterweight System

This system does away with fly galleries and operating of scenery from the flies, as all drops are handled from the stage floor. Each set consists of a pipe batten long enough for width of opening. Batten is equipped with quick acting clamps or chains with snap hooks for attaching scenery to batten. Batten is hung by steel cables which run over loft blocks which have self-lubricating bearing, to roller bearing head block, and cables are attached to counterweight frame with trimming chains.

Counterweight frame is equipped with fibre guides which run on tee-iron tracks. Tracks are placed on side wall of stage house. Counterweight frames are open on end so that weights can be easily added or taken off frame.

The set is operated by a manila rope hand line which is attached to top of counterweight frame and run over head block through locking clamp, thence over tension pulley and up to bottom of frame.

Portable Seating

Designed for your seating requirements. Made in standard sections of the tower and girder type of construction of interchangeable units. This type can also be covered with portable flooring to make a ramped floor. Easily handled and requires minimum space for storage.

Bus Turntables

Rigid steel construction, electrically operated and have remote control. Roller bearing throughout. Built for any capacity or requirements desired. The largest bus turntable in the country was built by us for the Central Union Bus Terminal in New York City.

Further Information

Further information on any of the above products will be furnished on request.

Some of Our Installations

Rockefeller Center, New York, N. Y.
Roxy Theatre, New York, N. Y.
Paramount Theatre, New York, N. Y.
Metropolitan Opera House, New York, N. Y.
Mastbaum Theatre, Philadelphia, Pa.
Keith's Memorial Theatre, Boston, Mass.
Granada Theatre, Chicago, Ill.
Fisher Theatre, Detroit, Mich.
Saenger Theatre, New Orleans, La.
Convention Hall, Atlantic City, N. J.
Public Auditorium, Cleveland, Ohio
Convention Hall, Philadelphia, Pa.
Bushnell Memorial, Hartford, Conn.
War Memorial, Louisville, Ky.
Auditorium, Minneapolis, Minn.
Severance Hall, Cleveland, Ohio
Community Center, Westchester, N. Y.
Convention Hall, Asbury Park, N. J.
Mecca Temple, New York, N. Y.
Al Malaikal Temple, Los Angeles, Cal.
Yale University, New Haven, Conn.
Ohio University, Athens, Ohio
McCarter Theatre, Princeton, N. J.
Union College, Schenectady, N. Y.
Columbia University, New York, N. Y.
Washington Irving High School, New York, N. Y.
Armstrong High School, Washington, D. C.

ELECTRICAL RESEARCH PRODUCTS INC.

Subsidiary of
WESTERN ELECTRIC COMPANY

MAIN OFFICE
250 West 57th Street
NEW YORK, N. Y.

Western Electric Company

Western Electric Sound System Is World's Standard of Quality

The Western Electric sound system is the world's acknowledged standard of quality. It was designed by Bell Telephone Laboratories, the largest research organization in the world devoted to the science of sound transmission.

It is manufactured by the Western Electric Company, makers of Bell Telephone equipment. It is an outgrowth of the telephone and the same high standards of quality are built into it.

It is distributed by ELECTRICAL RESEARCH PRODUCTS INC., which has installed more than 9,000 Western Electric Sound Systems in theatres, hotels, schools, steamships, civic auditoriums and other buildings of all types.

More than 2,300 users of sound equipment have changed to Western Electric to regain lost prestige and to secure for all time the highest standard of quality.

There is a Western Electric Sound System to Meet Every Need

There is a Western Electric Sound System to meet all needs in buildings and auditoriums of every type, size and shape. Western Electric Sound Systems are designed to operate with standard motion picture projectors; with motion picture projector furnished as an integral part of the equipment; for permanent installation; for mobile use (on stand to be moved to various locations within building); for portable use (packed in trunks) and for projecting 16 mm. sound pictures.

Every Installation Is Specially Engineered

For faithful, lifelike reproduction and dependable performance, specially engineered installation is essential.

In every case, type and size of suitable Western Electric sound system are determined by a careful survey, with special consideration given to such factors as volume, shape, seating capacity and acoustic characteristics of auditorium; make of motion picture projectors to be used, length of "throw" and power supply available. The survey also takes into consideration auditorium absorption and reverberation, physical nature of furnishings; extraneous noises and other conditions. Acoustic engineers, nationally recognized, recommend proper acoustic treatment, if needed.

Nation-wide Service Organization Assures Dependable Performances

Electrical Research Products' policy of installing Western Electric Sound Systems assures users dependable year-in-year-out performance. A staff of 500 expert service engineers with headquarters in more than 200 cities throughout the country regularly inspect and service installations, and are on call immediately night or day in case of emergencies.

More than 175,000 performances are given weekly with Western Electric Sound Systems with less than one-tenth of one per cent of program interruption due to failure of equipment.

Acoustic Consulting Service

This department of Electrical Research Products makes available to architecture and allied fields the acoustic knowledge, experience and facilities of Bell Telephone Laboratories and Electrical Research Products.

Its services are available to architects interested in architectural acoustics. Its trained staff of acoustic engineers are prepared to render expert consulting service in the fields of acoustic design of auditoriums, noise reduction, noise survey, sound analysis and acoustic material testing.

W. L. EVANS

Main, South and Mill Streets
WASHINGTON, IND.

CANADA: WINDSOR, ONTARIO

EVANS VANISHING DOOR WARDROBES

EVANS VANISHING DOOR is Patented in United States, Canada, and Foreign Countries

Trade Mark
"VANISHING DOOR"
Reg. U. S. A. and Canada

Adaptability and Advantages

Evans Vanishing Door wardrobes are designed for use in Schools, Hotels, Hospitals, Offices, Apartments, and Homes and offer the following advantages:

(1) Saving of space, as the doors in opening swing back into the wardrobe entirely out of the way.

(2) Ease of operation, as doors swing as easily as on common butt hinges.

(3) Quietness, with no tracks or guides to rattle and squeak.

(4) Low cost, due to the simplicity of the operating hardware.

(5) Ease of installing, due to the accuracy in cutting the wardrobe parts and the simplicity of the hardware.

(6) Perfection of ventilation, both of the wardrobes and as a medium for ventilating the rooms in which they are installed.

Ventilation

Ventilation is ordinarily provided by setting the doors up off the floor so that the air from the room (the used air always settles to the floor) is drawn into the wardrobes under the doors, passes upward through the wardrobes (drying wet or damp clothing that may be in the wardrobes) and through the wire mesh ceiling into the space above the wardrobes which is connected to the vent stacks. If the ceilings are plastered, small vents may be provided instead of a wire mesh ceiling over the entire top, or, if desired, openings may be made at the ends or backs of the wardrobes with connections to the vent stacks.

Simplicity

Simplicity was the predominant idea in designing the hinges, hence a hinge consisting of double pivoted arms, with no tracks, guides, rollers, or other intricate mechanism that might cause the doors to stick or bind, or to require repairs or adjustments from time to time. There is no adjustment provided for the hinges, as once they are properly installed (which is easily accomplished) there is no way for them to get out of adjustment. Each door is opened independently of the others and with such quietness and ease that simultaneous operation of all doors from a master door, through the use of complicated rods and levers, is unnecessary.

Arrangement

Arrangement of the number and size of units making up a section is optional. The wardrobes can be furnished in both double door units (either 4 ft. 0 in. or 5 ft. 0 in.) and single door units (either 2 ft. 0 in. or 2 ft. 6 in.). Four foot unit wardrobes are designated by certain class letters. For a 5 ft. 0 in. unit the class letter is followed by the figure "5"; that is, Class J is a 4 ft. 0 in. unit of a certain style wardrobe and Class J-5 is a 5 ft. 0 in. unit of the same wardrobe. The wardrobes illustrated in this catalog are all standard 12 ft. 0 in. sections consisting of three 4 ft. 0 in. units; however, any number of any size units may be arranged in a section.

Standardized Construction

Construction of the wardrobes has been standardized so that the same space is required whether the wardrobes are made with wood backs and ends or for plaster backs and ends, and whether the "Floor" or "Jamb" type hinges are used.

Doors

Doors are 1⅜ in. thick and made for openings 6 ft. 0 in. high (the doors setting 4¼ in. above the floor unless otherwise specified). Flush doors are the Evans Hollow Sanitary Door, made of ribs, with air spaces, $\frac{3}{16}$ in. cross-bands and ⅛ in. veneers. The panel doors have ⅛ in. rotary cut veneers except the Yellow Pine doors which have veneered panels but solid White Pine stiles and rails unless otherwise specified.

Ends, Backs, and Partitions

Ends, Backs, and Partitions are $\frac{13}{16}$ in. thick and are five-ply laminated if flush and three-ply laminated panels if paneled (stiles and rails of Yellow Pine panels are made of Solid Pine). Ends, backs, and partitions when furnished are made flush for flush-door wardrobes and panel for panel-door wardrobes.

Vented Ceiling

Vented ceiling is provided by using a heavy galvanized wire mesh covering the entire top of the wardrobes.

This can be furnished as an extra on wardrobes shown with plaster ceiling.

Tops

Tops used for Classes H and G wardrobes are made of heavy galvanized metal. Such tops can be furnished as an extra on any of the wardrobes instead of the wire mesh or for plastered ceiling.

Vanishing Door Hinges

Vanishing door hinges are made in two types: the "Floor" type (Classes CB-7 and CB-10) which are secured to the floor and the ceiling, and the "Jamb" type (Class W) which is secured to the jamb. These new hinges have many times the strength of the old Classes B-7, B-10, and X, which they supersede. These hinges are substantially made of high grade steel, will carry a door much heavier than ever used on wardrobes, and are *unconditionally* guaranteed. Furnished in dull black finish only.

The CB-7 and CB-10 hinges will set the door from nothing up to 4¼ in. above the floor. If desired, Special Class CB-7 or Special Class CB-10 hinges can be furnished which set the doors 6 in. above the floor. The CB-7 hinge is used for 4 ft. 0 in. units and swings the door, when opened, back into the wardrobe 18½ in., leaving but 4½ in. projecting past the trim which is necessary for the door handles. The CB-10 hinge is used for 5 ft. 0 in. units and swings the door 24½ in. back into the wardrobe, leaving 4½ in. projecting beyond the trim.

The W hinge will set the door from a *minimum* of 4¼ in. above the floor up to any height desired. This hinge is used on both 4 ft. 0 in. and 5 ft. 0 in. units. It swings the door 18½ in. back into the wardrobe, leaving only 4½ in. projecting beyond the trim on a 4 ft. 0 in. unit and 10½ in. on a 5 ft. 0 in. unit.

Door Pulls, Door Stops, and Felt Strips

Door pulls, door stops, and felt strips are furnished with the wardrobes (except that no felt strips are required with the continuous-door wardrobes). The pulls and stops are finished in dull black. The felt strips are to be glued to the inner side of the casings so that the striking of the doors against the casings, when being closed, will be noiseless.

Racks and Garment Hangers

Racks and garment hangers are standard arrangement for the pupils' units. The racks for a double door unit consist of three metal brackets, each provided with four holes at the top and four at the bottom to receive rods $\frac{13}{16}$ in. in diameter. The lower front rod is metal and the other seven rods are hard wood. The racks for a single door unit require but two brackets. Brackets and rods are finished dull black. The garment hangers are manufactured especially for this purpose and are substantially made of hard wood, finished with wax, and provided with a hook that holds them securely on the rod, yet permits of easy removal. The number of hangers furnished for the various size units are: 4 ft. 0 in. unit—18; 2 ft. 0 in. unit—9; 5 ft. 0 in. unit—24; and 2 ft. 6 in. unit—12.

Shelves and Coat Hooks

Shelves and coat hooks, as shown in lower right illustration on page 4, can be furnished instead of racks and garment hangers at the same price. This arrangement consists of a 12 in. top shelf and a 10 in. bottom shelf, each supported by three brackets for a double door unit. A hook strip is provided for each of these shelves and also one to set below the bottom shelf. Sixteen two-prong, dull black finish hooks are furnished for a 4 ft. 0 in. unit and a proportional number for other units.

Book-Case

Book-case with five shelves, as shown in illustration on page 4, can be furnished instead of racks or shelves without extra charge. This book-case can be made for either 4 ft. 0 in., 2 ft. 0 in., 5 ft. 0 in., or 2 ft. 6 in. units.

Blackboards

Blackboards, either "Sterling Lifelong," Natural Slate or Fiber, can be furnished either "non-continuous" as shown in illustration on page 3, or "continuous" as shown in illustration on page 4, as extras. It is recommended that "non-continuous" blackboards be planted on the doors with wood mould on all four sides and "continuous" blackboards be glued to the door and held with a brass mould at the top and bottom edges only. Chalk troughs, 1⅜ in. wide, are included with the "continuous" blackboards.

Umbrella Racks and Rubber Racks

Umbrella racks and rubber racks, as shown on the backs of the doors in illustration on page 4, are furnished as extras. The umbrella racks are made with a heavy coppered rail and a solid cast brass drip pan. The rubber racks are made with hard wood sides, solid sheet copper backs and heavily coppered cross rods. Both racks are finished dull black.

Extras

Metal tops, wire mesh screen, wood backs, ends, and partitions can be furnished for any of the wardrobes not equipped with them, as an extra.

SPECIFICATIONS

All wardrobes shown or indicated on the plans shall be the Evans Vanishing Door Wardrobes as made in the white knock-down by W. L. EVANS, Washington, Indiana, to be installed in the white and finished by the contractor. Wardrobes shall be as follows:

Class.....made to set {*in a recess flush with the wall* / *against the wall with an exposed top*}

in.....lengths, of.....
(length of wardrobes) *(kind of wood)*

with {*panel* / *flush*} doors, {*wood* / *plaster*} ends and backs, {*plaster* / *wire mesh*} ceiling, {*with* / *without*} partitions, using {*Floor* / *Jamb*} type hinges, with interior arrangement of {*racks and garment hangers* / *shelves and coat hooks*} and {*with* / *without*} mullions between the pairs of doors.

RECESS DIMENSIONS

The recess length, from finished plaster to finished plaster, should be the total length of the units plus 1 in.; that is, 10 ft. 1 in., 12 ft. 1 in., 16 ft. 1 in., etc. The standard depth, (which may be varied), is 2 ft. 2 in. from finished plaster to finished plaster, and the height is 6 ft. 4¼ in. from the floor to the finished plaster (or rough opening, if wire mesh or metal top is used) above.

Note: *For continuous-door wardrobes, without mullions, the recess length is the total length of the units with nothing added.*



Class D—if made with flush doors
Class J—if made with panel doors

Made to set in a recess flush with the wall, for plaster backs and ends, without partitions, but provided with wire mesh ceiling and equipped with either "Floor" type (as illustrated) or "Jamb" type hinges.



Class H—if made with panel doors
Class G—if made with flush doors

Made to set against the wall, with ends and top exposed; provided with ends, backs, partitions and top, without wire mesh for the ceiling (as ceiling is formed by the top) and equipped with either "Floor" type (as illustrated) or "Jamb" type hinges.



Class C—if made with flush doors
Class I—if made with panel doors

Made to set in a recess, flush with the wall; provided with backs, ends and partitions, with wire mesh ceiling and equipped with either "Floor" type (as illustrated) or "Jamb" type hinges. *Note:* Non-continuous blackboards (as illustrated) are extra.



Class X—if made with panel doors
Class P—if made with flush doors

Made to set in a recess flush with the wall, for plaster backs, ends and ceiling, without partitions or wire mesh for ceiling and equipped with either "Jamb" type (as illustrated) or "Floor" type hinges.

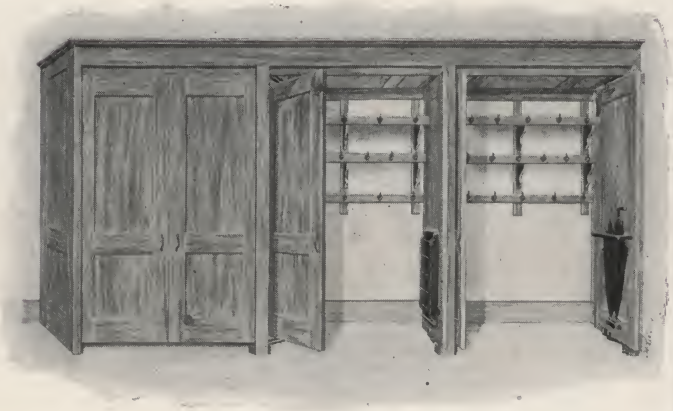
Note: The five-shelf book case, as illustrated in end unit, can be furnished for any of the wardrobes in place of equipment *for* clothing, without extra charge.



Class BB—if made with flush doors
Class AA—if made with panel doors

Made to set in a recess flush with the wall, for plaster ends, backs and ceiling, without partitions or wire mesh for ceiling but with continuous doors without mullions. Equipped with either "Jamb" type (as illustrated) or "Floor" type hinges.

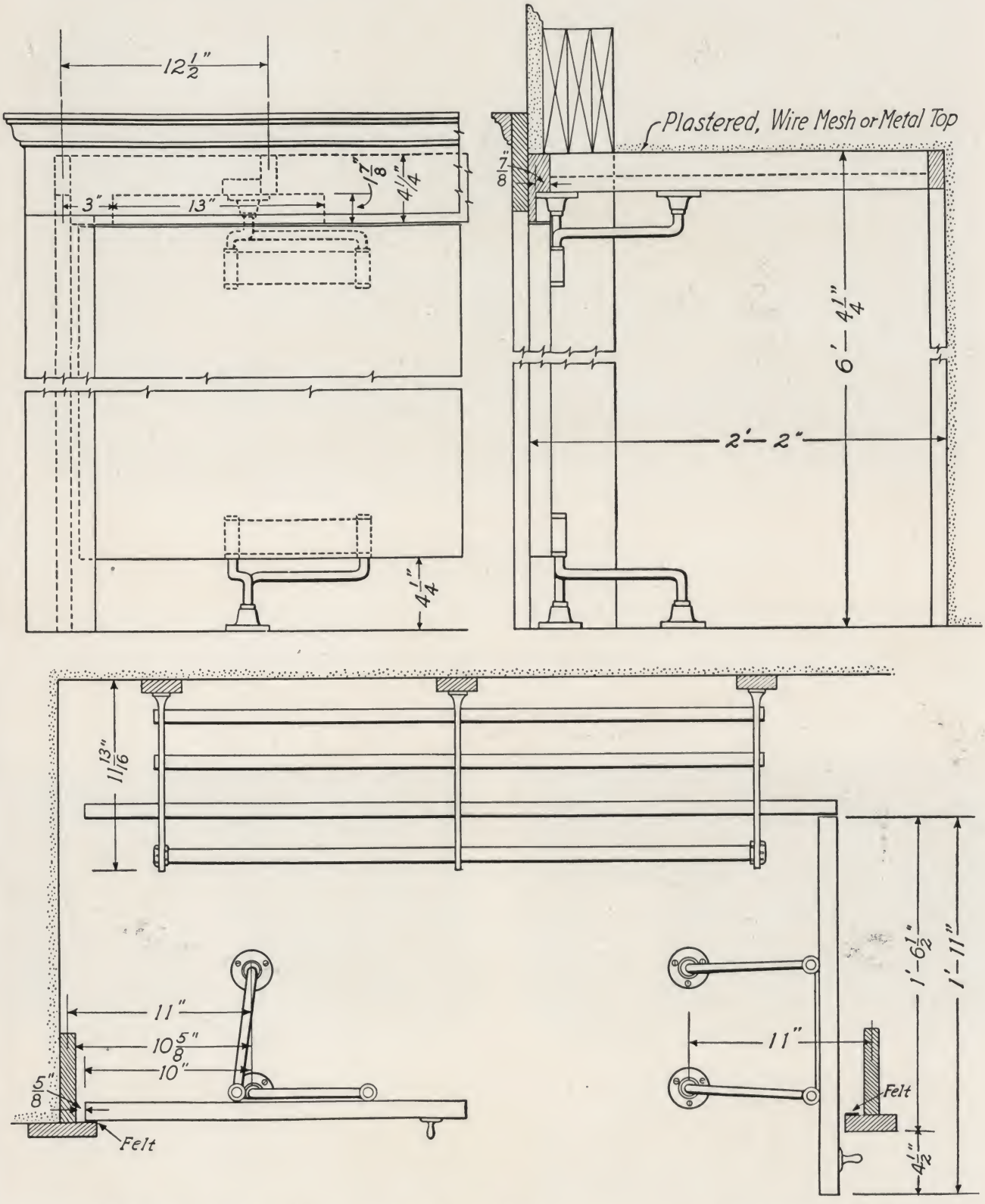
Note: *Continuous blackboards* (as illustrated) are extra.



The above illustration is of a Class X wardrobe provided with exposed ends and top. Such parts can be furnished as an extra on any of the wardrobes not equipped with them. The umbrella racks and rubber racks, as shown secured to the backs of the doors, are also furnished as extras.

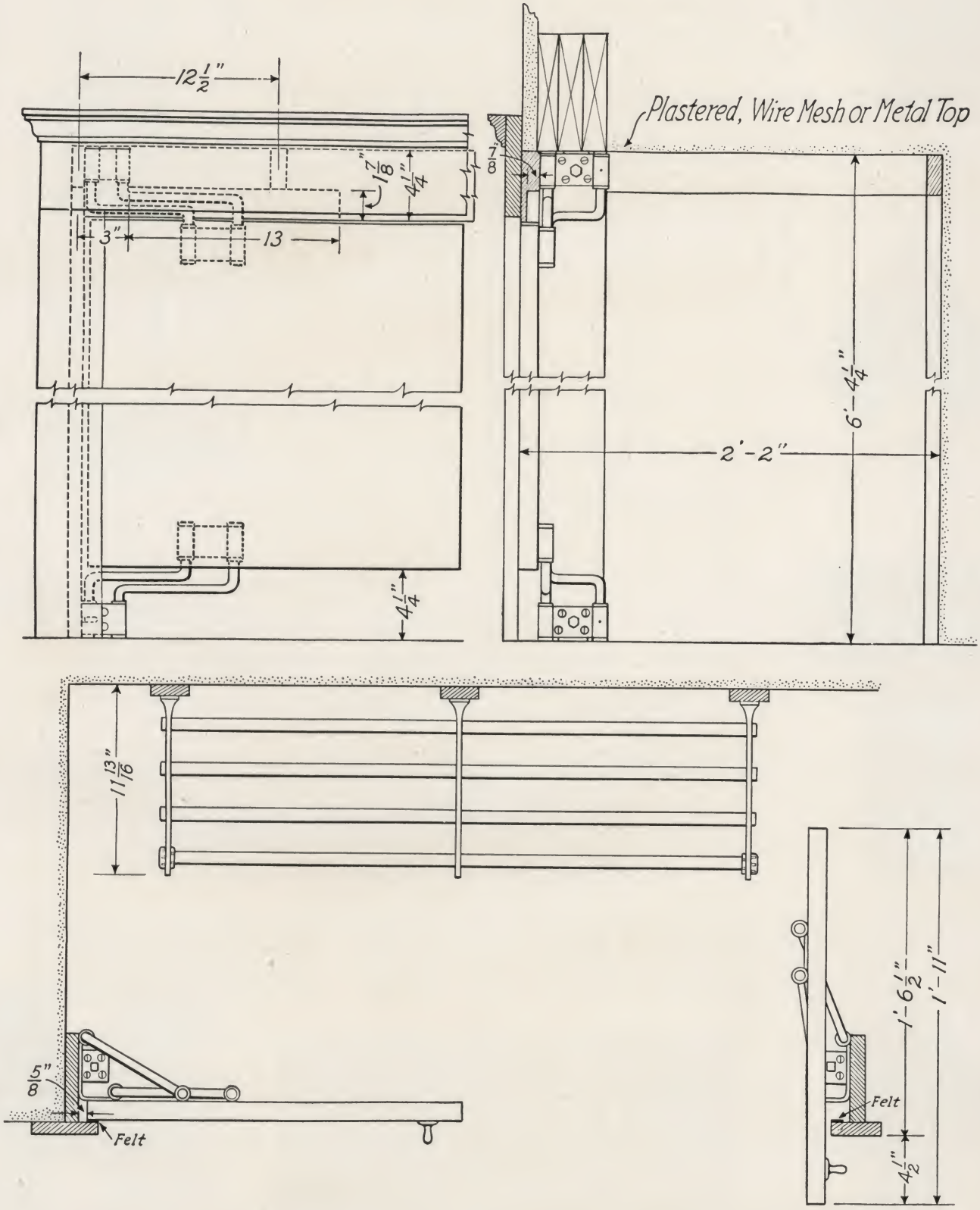
As illustrated above, shelves and coat hooks, instead of racks and garment hangers, can be furnished for any of the wardrobes without extra charge.

APPLICATION OF CLASS CB-7 (FLOOR TYPE) HINGE

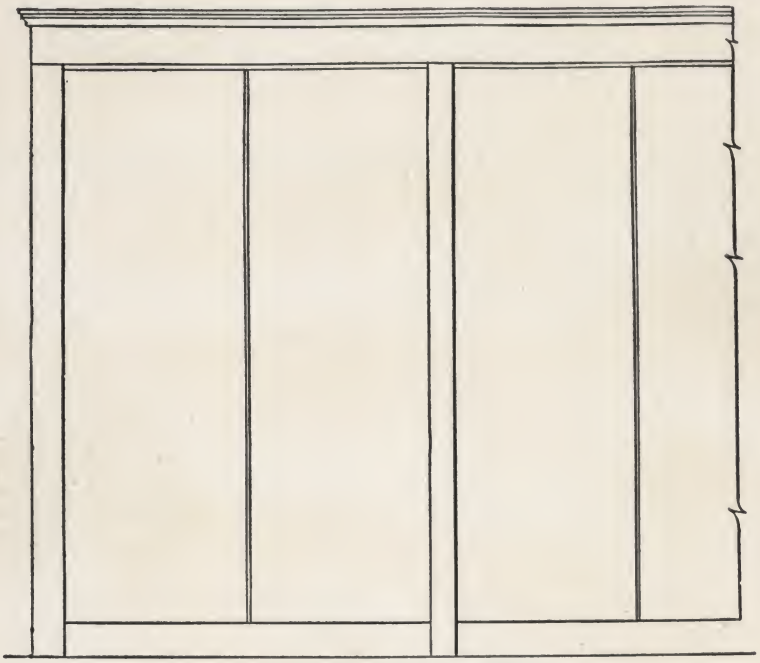


NOTE: For 5'-0" units (using CB-10 hinges) add 3" to dimensions showing distance of hinge from jamb

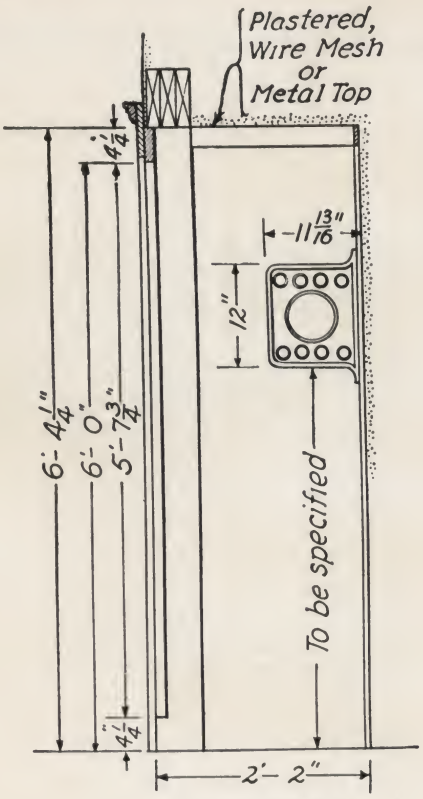
APPLICATION OF CLASS W (JAMB TYPE) HINGE



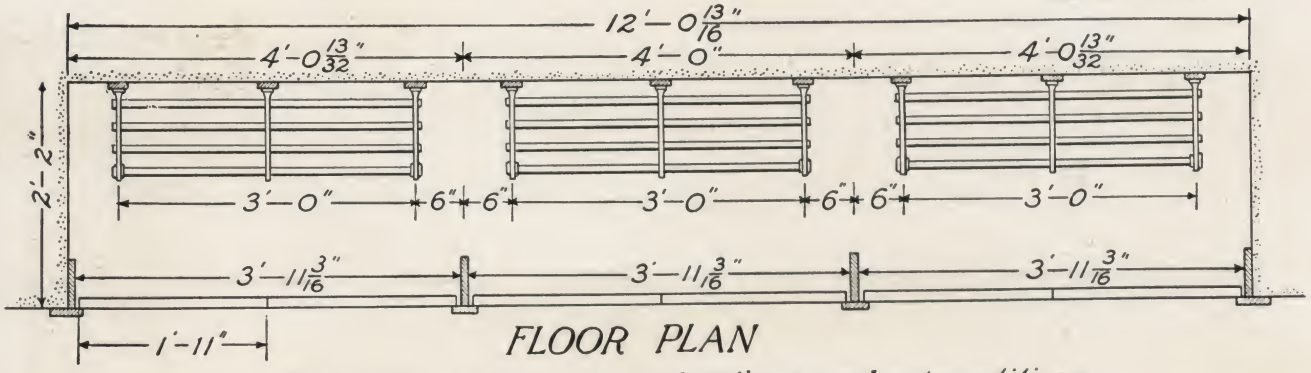
GENERAL DETAILS



ELEVATION

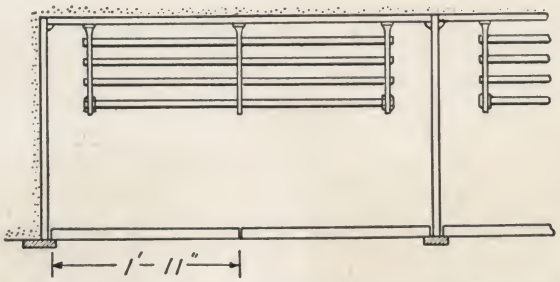


SECTION

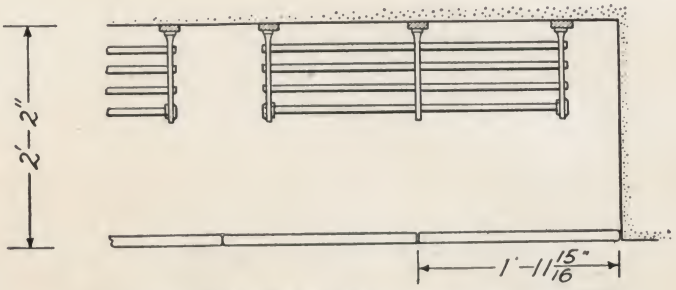


FLOOR PLAN

For plaster backs, ends and ceilings - without partitions



With wood backs, ends and partitions



For continuous doors, without mullions

Scale ½" = 1'-0"

NOTE: For 5'-0" units add 1'-0" to unit and shelf lengths and 6" to door widths

EVANS RING JOINT



EVANS RING JOINT MACHINE

Model M

Patented United States, Canada and Foreign Countries

Trade Mark

"RING JOINT"

Reg. U. S. Patent Office

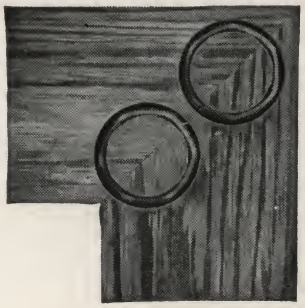
The merits of "Ring Jointed" trim have created such a demand that there is now at least one ring joint machine in almost every territory, so there should be no hesitancy in specifying this method of assembling trim. In case there is not a ring joint machine in some particular territory one will be gladly sent on trial to any responsible party.

The Evans "Ring Joint" method is the most practical for fastening two pieces of wood together so that a tight, permanent joint is made. This joint is particularly adapted to trim, either mitered or square-end; and is equally adapted to various applications, as shown in the illustrations, and many other kinds of architectural woodwork.

The principle of this method of making joints is that a hexagon ring is expanded over a steel cone, forced into a groove previously cut in the two pieces of stock, and the ring, after being pressed over the cone, tends to return to its former shape and diameter, exerting a continuous pressure inward against the wood, and holding it tightly in place. This inward pressure is such that it will take care of a reasonable amount of shrinkage of the wood.

The machine can be used in the planing mill or shop and, while substantially built, it is of such size and weight (560 lbs.) that it can be taken directly to a job and moved from floor to floor if desired. It is equipped with a direct connected motor and the necessary sleeves, cones and cutters for the various sizes of rings.

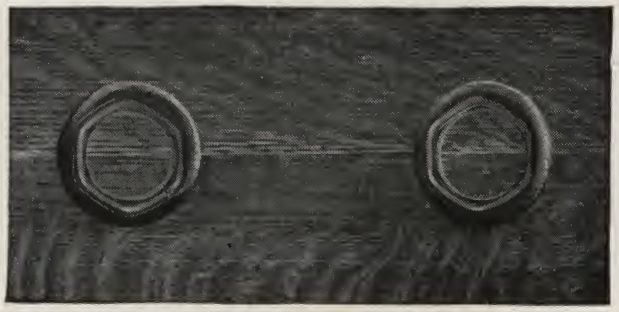
The rings are made in 1, 1¼, 1½, 1¾ and 2-in. sizes, which cover all ordinary requirements. They are very low in price, and as only twenty seconds are required to cut the groove and force the ring into the groove, the cost of "Ring Jointing" trim is exceptionally low.













ESTABLISHED 1912

MILLER SCHOOL WARDROBES

MANUFACTURED BY

K-M SUPPLY CO., INC.

123 West 8th Street

KANSAS CITY, MO.

REPRESENTATIVES IN PRINCIPAL CITIES

Description

The Miller School Wardrobe is a series of either wood or steel doors, operated simultaneously from the left end. Any door can be opened separately if desired. Doors can be furnished with slate blackboard or cork bulletin board if desired. Each series of doors can be controlled with one lock.

Door Width—Our standard doors are 30 in. wide, but narrower doors can be furnished if required.

Depth of Recess—Recess depth may vary. Center of pivot can be changed to meet various depths of recesses. However, a 30-in. deep recess is recommended for full capacity and proper ventilation, also direct center of gravity pivoting of doors.

Height of Opening—Standard height of opening from finished floor line to underside of rough buck 6 ft. 2 ins.

Width of Opening—Width of opening varies with number of doors.

Dimensions between rough bucks for from 3 to 7 door units, inclusive, are given under plan of doors on the following page and is based on 30-in. standard door widths.

Guarantee and Service

The K-M Supply Co., Inc., guarantees successful operation of Miller Wardrobes and does not accept orders unless they are permitted to install the wardrobes. Materials, workmanship and operation are guaranteed indefinitely. A Servicing Department is maintained which services Miller Wardrobes free of charge for an indefinite period.

Specifications—Miller School Wardrobes

Wardrobes shall be the Standard Type Miller Wardrobes as furnished by the K-M Supply Co., Inc., Kansas City, Mo. Manufacturer to furnish and install completely the doors [with slate blackboard] [without slate blackboard] (or doors with cork bulletin board). Operating mechanism, door hardware—all solid bronze, except for legs, which are cast iron, bronze plated. Door knobs and plates satin finish, solid brass (or bower barff). Top jambs, side jambs—all woodwork to be furnished in the white. (Steel doors prime coat or special grained finish if desired.) All doors to open in one operation and either door to open individually.

Notes: Special finish knobs, plates and legs if desired. For casings, shelves, shelf brackets, hooks and hook strips provide elsewhere.



Typical Classroom, DeWitt Clinton High School, New York, N. Y.

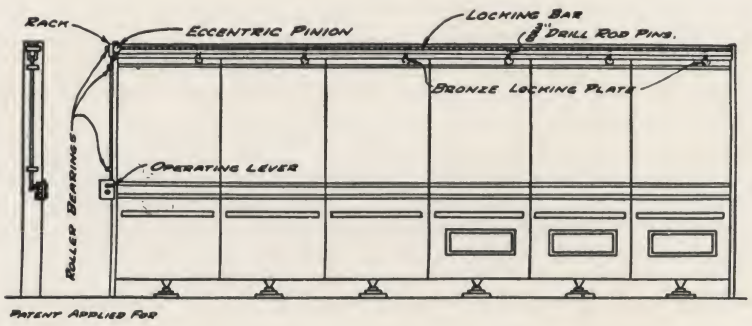
Note: No pivot or carrying arms extending from doors causing obstructions on the floor when doors are in open position

DETAILS OF MILLER SCHOOL WARDROBES

Specifications of Doors

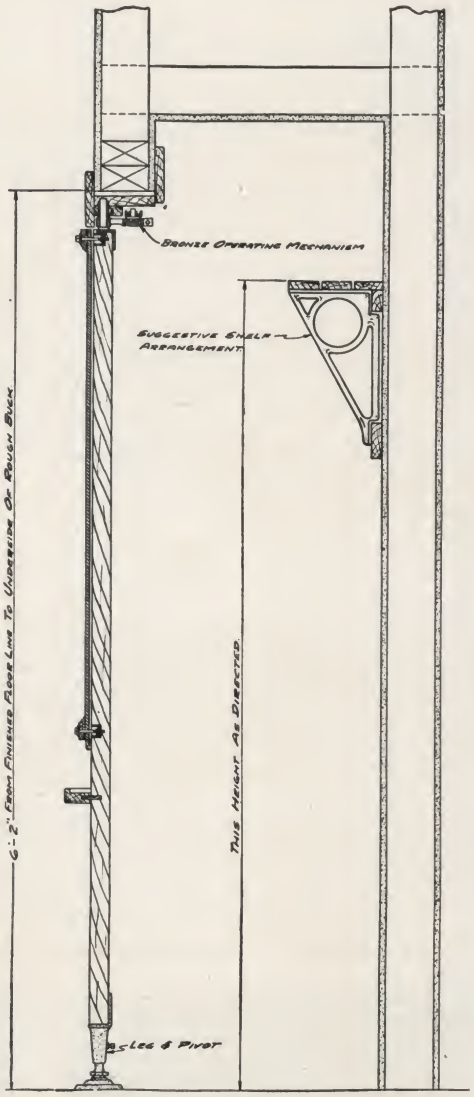
Wood—Standard doors are five-ply, built-up, veneered (any kind of wood) flush type or paneled type, also white pine stiles, laminated panels. Thickness of doors either 1⅜ or 1¾ ins.

Steel—Hollow metal, furnished with prime coat baked enamel (any color) or grained baked enamel finish as desired. Doors to be either 1⅜ or 1¾ ins.



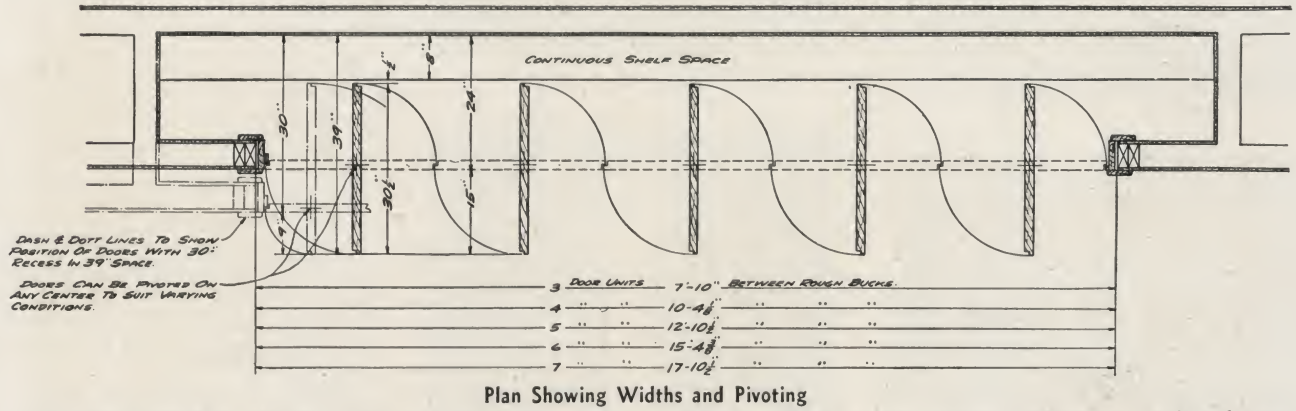
Operating and Locking Mechanism

Miller Wardrobes can now be furnished with a multiple locking device to be used in conjunction with the multiple operation of all doors and the individual operation of each door, except the first door; also on wardrobes with individual operation of all doors only, with one lock eliminating petty pilfering.



Vertical Section

Showing end view of shelf arrangement and the fact that doors are flush with balance of wall



Plan Showing Widths and Pivoting

Illustrating how Miller Wardrobe Doors can be pivoted on various centers to achieve required distance between rear wall and outer reach of opened door with varying depths of recess; also how continuous single or double shelf is used. Note no extended pivot brackets or carrying arms causing obstructions on the floors when doors are opened

FRED MEDART MANUFACTURING CO.

School Equipment: Steel Wardrobes, Lockers, Cabinets and Shelving; Gymnasium and Playground Apparatus; Swimming Pool Equipment

Potomac and DeKalb Streets
ST. LOUIS, MO.

16 West 61st Street
NEW YORK, N. Y.

ENGINEERING AND SALES SERVICE IN PRINCIPAL CITIES

For Our Catalogue on Basket Ball Backstops, see Manufacturers' Index

THE LOCKEROBE

TRADE MARK REGISTERED

A multiple of wardrobe compartments with all doors simultaneously operated by master control doors, constructed entirely of steel, providing a sanitary, ventilated, fireproof, supervised system for school classrooms and corridors.

General Information

A Lockerobe Unit is 22 inches wide enclosed by a pair of doors.

A Lockerobe Section is an assembly of the required number of Units with a single control of the doors of all the Units.

Interiors of Units are by individual specification. Standard interior provides individual coat compartment and hat and book compartment for each pupil, as illustrated. Also to be had with group compartments equipped with coat rod and sliding non-detachable clothes hooks—or as specified.

Capacity, four pupils accommodated per Unit.

Binding of doors is impossible and adjustments dispensed with due to elimination of hinges. Doors operate on a patented continuous pivot formation, engaging with the door frame at top and bottom.

Construction costs of the school building are reduced by planning classrooms for Lockerobe installations. The space-saving features reduce the size of classrooms in comparison with other equipment.

Further reductions in construction costs are effected by the Lockerobe having steel sides, tops, and backs, thus eliminating the cost of finishing recess interiors with plaster, tile, or glazed brick.

The Lockerobe is a complete, self-sustained assembly with weight resting entirely on its own base, thus eliminating the cost of overhead framing and support work. All parts are enameled at the factory and are interchangeable, thus eliminating cost of trimming, fitting, and painting.

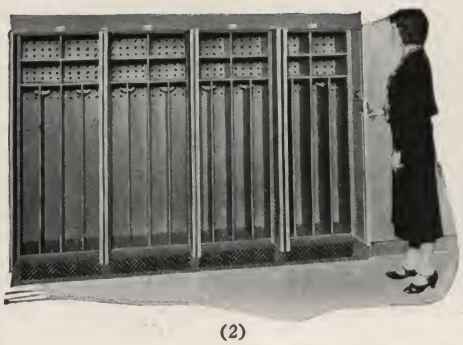
The Lockerobe may also be installed free standing on built-up base or floor of buildings without recesses.



(1)



(3)



(2)





(4)

(1) Four Units of a Lockerobe Section, 16-Pupil Capacity, with All Doors Simultaneously Closed by the Control Unit.

(2) Simultaneous Opening of All Doors of a Lockerobe Section as the Doors of the Control Unit Are Opened.

(3) Four Units of a Lockerobe Section with Wraps and School Paraphernalia in Place, Illustrating the Compact Orderliness of the Lockerobe.

(4) Companion Cabinets Designed to Harmonize with Classroom Lockerobe Installations.

To the left is the Bookcase constructed of steel with double doors with glass fronts. Each Bookcase has six adjustable shelves. Finished to match the Lockerobe installation.

No. 745—36 in. wide, 14 in. deep, 78 in. high.

No. 747—48 in. wide, 14 in. deep, 86 in. high.

Also made same height as the Lockerobe to fit the same recess.

To the right is the Combination Bookcase and Instructor's Wardrobe constructed of steel with double doors. The bookcase compartment with glass door front has six adjustable shelves. The wardrobe compartment with steel door front has a hat shelf and coat hanger rod. Finished to match the Lockerobe installation.

No. 746—36 in. wide, 14 in. deep, 78 in. high.

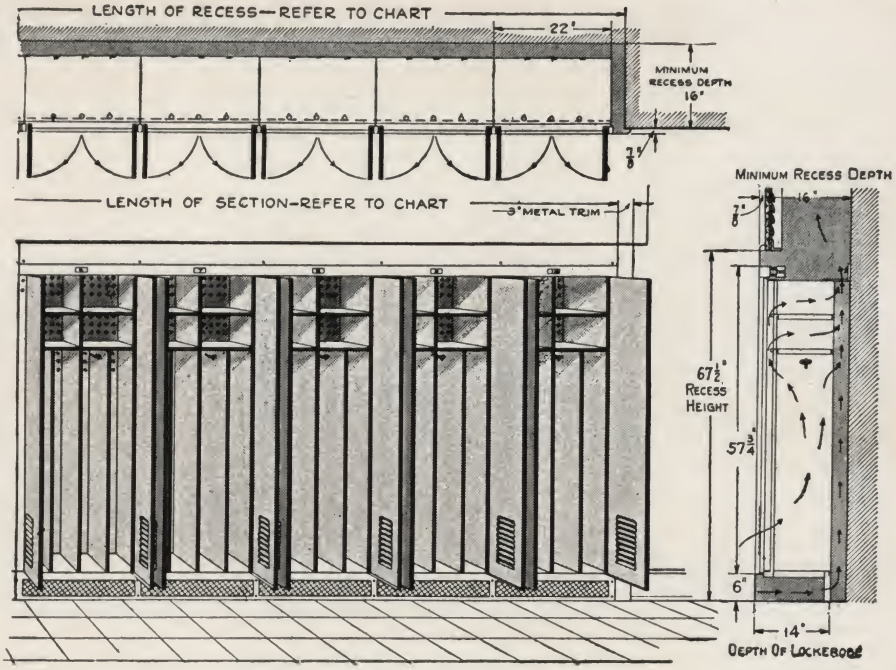
No. 748—48 in. wide, 14 in. deep, 86 in. high.

Also made same height as the Lockerobe to fit the same recess.

Recess Details

Chart showing number and length of various Lockerobe Sections and length of recess required to accommodate given number of pupils in classroom:

Number of Pupils	Overall Length of Lockerobes, ft.	in.	Length of Recess, ft.	in.
8	3	9½	4	½
12	5	7½	5	10½
16	7	5½	7	8½
20	9	3½	9	6½
24	11	3	11	6
28	13	1	13	4
32	14	11	15	2
36	16	9	17	0
40	18	7	18	10
44	20	6½	20	9½
48	22	4½	22	7½
52	24	2½	24	5½



Specifications

Size—Inside dimensions of each unit 22 in. wide, 12½ in. deep, 54¾ in. high. Shelves spaced 6½ in. apart.

Construction—Built on unit principle, each section a self-contained assembly.

Doors and Frames—Made of highest quality, full pickled, re-rolled, patent-leveled, re-squared sheet steel free from buckle and scale. Doors can be operated only by the Control Door.

Control Doors—Positive operating mechanism that automatically and simultaneously opens and closes all doors of the same Section. Equipped with masterkeyed lock.

Body—Backs, sides, tops, bottoms, partitions, and shelves are interchangeable and made from the best quality sheet steel.

Base—Recessed Sections connected to forced ventilation system have 6-in. perforated base. Recessed Sections not connected to forced ventilation system have 6-in. cabinet base without perforations. If concrete or other built-up base is provided, 1½-in. cabinet base is supplied. Non-recessed Sections have 1½-in. cabinet base.

Ventilation—Doors louvred at top and bottom. If to be connected to forced ventilation system, doors are louvred at bottom only, backs and cabinet base perforated—or as specified.

Hardware—Clothing hooks, nuts and bolts cadmium-plated. Number plates of solid brass with black etched numerals. Door handles of die-cast alloy, nickel-finished over copper base.

Finish—School Furniture Brown, Olive Green—or as specified. Enamel is baked on to a hard finish.

THE

LOCKEROBE

TRADE MARK REGISTERED

For Gymnasium Dressing Rooms



Gym suits and shoes are either contained in the usual wire baskets for storage in the Lockerobe and carrying to dressing lockers or placed in the Lockerobe compartments without the use of baskets.

By this self-service system, a Lockerobe Section made up of as many units as needed to accommodate the number of students in a class and controlled by a single lock, is assigned to each class. The instructor unlocks the Lockerobe, giving the entire class access to its gym togs, and has constant supervision when apparel is being removed or replaced in the Lockerobe.

Dressing Lockers as manufactured by the FRED MEDART MANUFACTURING CO. to accommodate the largest number of students in any class are conveniently grouped near the Lockerobe for the street clothing of students during the period of time the gym class is in session.

These lockers are controlled by a multiple locking device by which all doors can be opened when the instructor unlocks the control lock. All doors automatically lock when closed.

Group-Control Dressing Lockers may be omitted and Lockerobes with interiors to hold street clothing substituted. Lockerobes with gym tog compartments alternating with clothing compartments is another variation.

Combined cost of the Lockerobe and wire baskets is less than the combined cost of steel shelving, wire baskets and individual padlocks for the same number of students.

Plan of a Lockerobe Gym System adaptable to individual conditions will be presented by us on request.

RICHARDS-WILCOX MANUFACTURING CO.

INCORPORATED

Manufacturers of School Wardrobes

AURORA, ILL.

BRANCHES IN ALL PRINCIPAL CITIES

For Other R-W Products, see Manufacturers' Index

NO. 780 "PaiR-Way" RECEDING DOOR WARDROBE

The No. 780 Type "PaiR-Way" Wardrobe is manufactured in standard two-door units with doors 2 ft. wide or as specified by the architect. Doors recede into the wardrobe between the hat and coat racks provided for each two-door unit. Each rack accommodates 17 pupils when 2-ft. doors are used, and a correspondingly greater number when the door widths are increased. No floor tracks are used.

Specifications

Operating Hardware—Shall consist of continuous pivot arms extending from the top of the wardrobe to the floor. They shall be of cast iron except the connecting rod, which shall be of cold rolled steel. The load-carrying arm shall have a ball pivot bearing. Furnished in dead black baked enamel unless otherwise specified. If the doors are furnished without blackboards, they shall be equipped with brass or bronze bow handles. If the doors are furnished with blackboards or corkboards, they shall be equipped with individual bronze latches. A multiple locking mechanism operating from one door can be furnished when so specified.

Metal Doors—Steel doors shall be cork insulated, 1⅜ in. thick, of 16-gauge material, with two priming coats of gray color baked on. Door widths to be 2 ft. unless otherwise specified.

Wood Doors—Shall be flush 1½ in. thick, or two-panel design 1⅜ in. thick, with built-up cores and veneer as specified.

Steel Jambs—Jambs and head shall be of 16-gauge steel, and pivot arm supports shall be of 11 gauge.

Wood Jambs—Jambs and head shall be of the same kind of wood as the doors, and all operating hardware supports shall be of poplar. No mullions required.

Casings—All casings shall be furnished by others unless otherwise specified.

Special Units—Wardrobes may be furnished complete with teachers' wardrobes, and bookcases or supply cabinets with receding or hinged doors and adjustable shelves.

Interiors—Interior equipment shall include (steel or wood) hat and coat racks with heavy duty double prong hooks and steel brackets or box type racks with hanging bar.

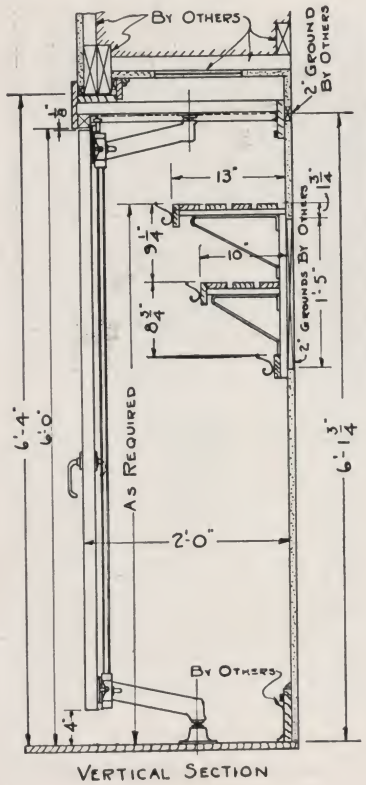
Blackboards, Etc.—Slate blackboards and corkboards furnished when specified. Chalk rails included.

Umbrella Racks and Pans—Furnished when specified.

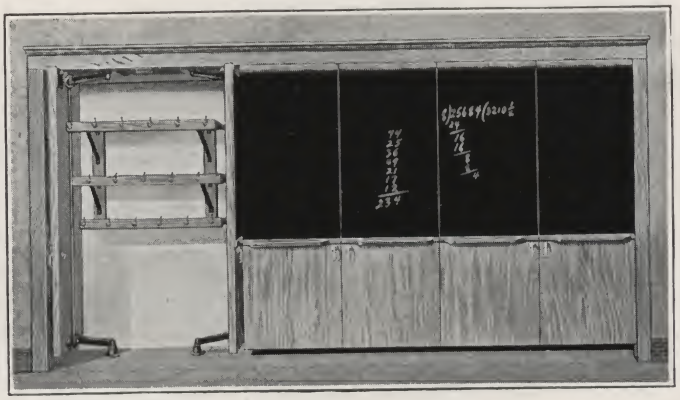
Installation—The complete wardrobe as specified shall be furnished, installed, and guaranteed by RICHARDS-WILCOX MANUFACTURING CO. Plastered recess, grounds, casings, base, filling, staining and painting to be by others.

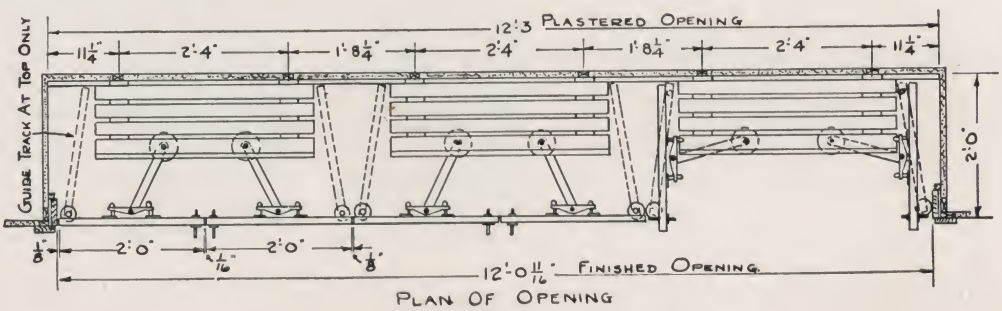
To specify—use the following table of catalogue numbers.

Cat. No.		Type of doors	Blackboards	Corkboards
No. 778 or No. 779	FR	Flush	Without	Without
	FBR	Flush	With	Without
	FCR	Flush	Without	With
No. 780	PR	2-Panel	Without	Without
	PBR	2-Panel	With	Without
	PCR	2-Panel	Without	With



VERTICAL SECTION





PLAN OF OPENING

Other Types

No. 777 Wardrobe Hardware is similar to No. 780 Type except top and bottom pivots are not connected and bottom of door is guided by a track.

No. 1777 Wardrobe Hardware is similar to No. 777 Type except pivot arms are made of steel instead of malleable iron.

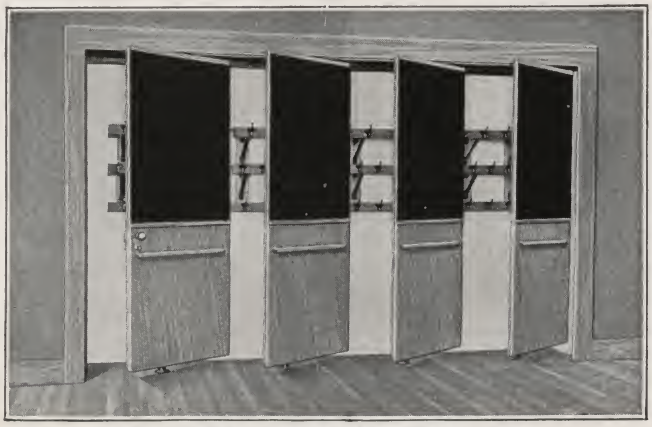
NO. 778 AND NO. 779 "MULTIPLE OPERATION" RECEDING DOOR WARDROBES

No. 778 Type Wardrobe

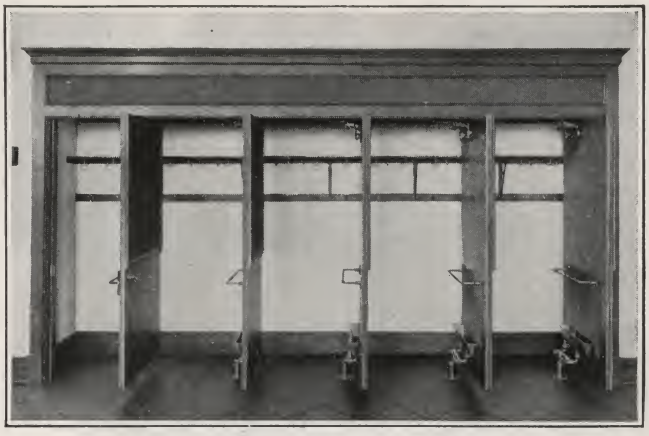
Provides multiple operation with master door control; fully receding doors; separate hat and coat racks for each door. No. 778 Type accommodates 10 pupils per door.

No. 779 Type Wardrobe

Provides multiple operation with master door control; semi-receding doors; continuous hat and coat racks extending full length of the wardrobe. No. 779 Type accommodates 10 pupils per door.



No. 778-FBR Wardrobe Doors Partly Open



No. 779-FCR Wardrobe Doors Open

Specifications

Operating Hardware—The door operating hardware shall consist of heavy duty double ball bearing top and bottom malleable cast pivot arms complete with multiple operating device, which shall permit positive adjustment in all directions, thereby providing perfect alignment of the doors. Operating hardware to be furnished in dead black baked finish and exposed master door latch or lock in solid bronze.

Metal Doors—Steel doors shall be cork insulated, 1⅜ in. thick of 16-gauge material, with two priming coats of neutral color baked on. Widths to be 2 ft. 6 in. or as specified by the architect.

Wood Doors—Shall be flush 1½ in. thick, or two-panel design 1⅜ in. thick, with built-up cores and veneer as specified.

Steel Jambs—Jambs and head shall be of 16-gauge steel, and pivot arm supports shall be of 11-gauge.

Wood Jambs—Jambs and head shall be of the same kind of wood as the doors, and all operating hardware supports shall be of poplar. (No mullions.)

Casings—All casings shall be furnished by others unless otherwise specified.

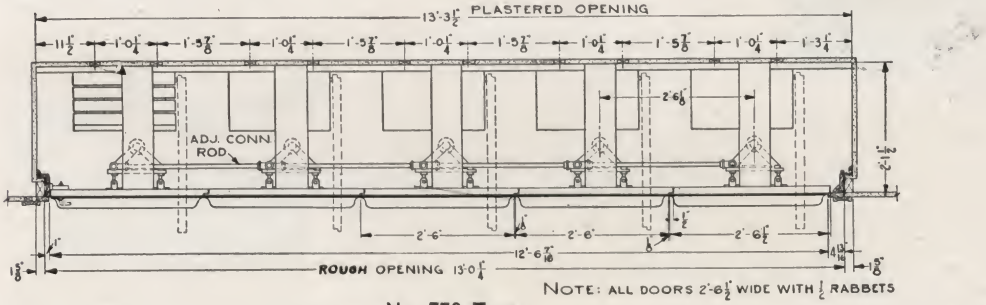
Special Units—Wardrobes may be furnished complete with teachers' wardrobes, and bookcases or supply cabinets with receding or hinged doors and adjustable shelves.

Interiors—Interior equipment shall include standard hat and coat racks with heavy duty double prong hooks or box type racks with hanging bar.

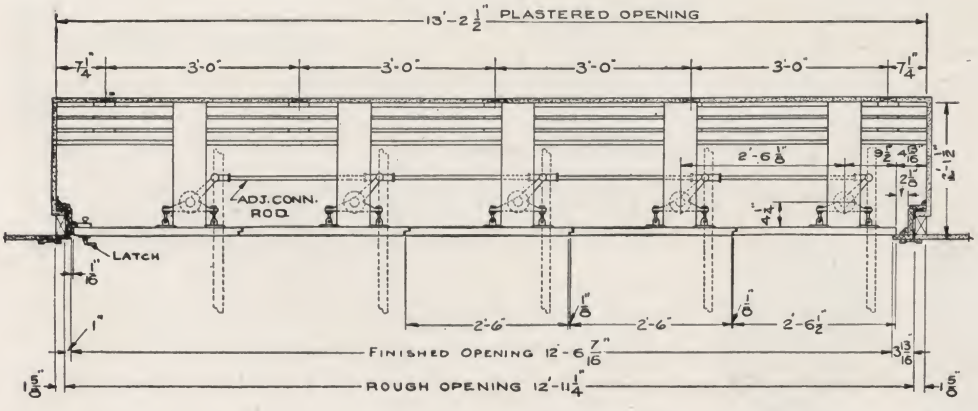
Blackboards, Etc.—Slate blackboards and corkboards furnished when specified. Chalk rails included.

Umbrella Racks and Pans—Furnished when specified.

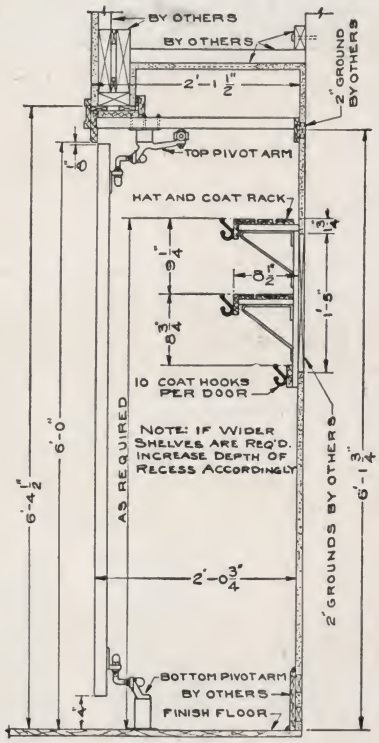
Installation—The complete wardrobe as specified shall be furnished, installed, and guaranteed by RICHARDS-WILCOX MANUFACTURING CO. Plastered recess, grounds, casings, base, filling, staining, and painting to be by others.



No. 778 Type



No. 779 Type



No. 779 Vertical Section
(No. 778 Similar)

THE STANLEY WORKS

Member of The Producers' Council, Inc.

Manufacturers of School Wardrobe Hardware

NEW BRITAIN, CONN.

NEW YORK, N. Y., 100 Lafayette Street
CHICAGO, ILL., 61-67 West Kinzie Street
PHILADELPHIA, PA., 617 Filbert Street
LOS ANGELES, CAL., 407 American Bank Building
SAN FRANCISCO, CAL., 576 Monadnock Building
SEATTLE, WASH., 619 Mutual Life Building
CLEVELAND, OHIO, 1404 Builder's Exchange Building

For "Roll-Up" Doors and "Swing-Up" Door Hardware, see Manufacturers' Index

STANLEY HARDWARE FOR SCHOOL WARDROBES

NO. 2705

STANLEY S.W.

Suitable for doors of any thickness, 18 to 48 ins. in width and any height. Doors are hung in pairs, with single doors at each end. Any number of sections can be had in a unit.

Track and rail, and hinges at top and bottom provide smooth operation.

Hinge arms are set well back in wardrobe to eliminate any tripping hazard.

Note: It is necessary to design truss of sufficient width for securing head jamb and to meet load requirements.

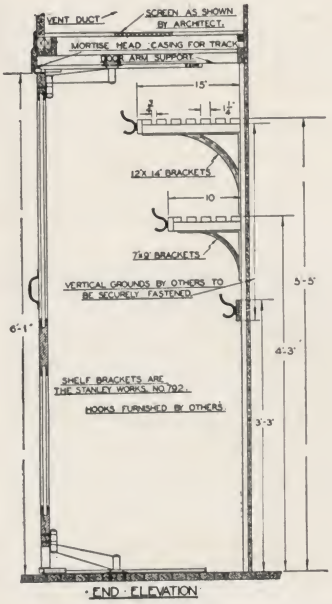
Specificational Data

Extra heavy wrought steel hinges, with 8¾-in. arm, ¼ in. thick. Wrought steel track and rail with bronze guides, minimizing wear. Designed to set doors from 1¼ to 4 ins. above floor to provide ventilation.

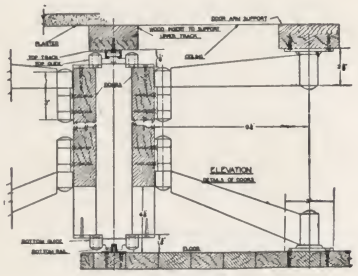
Two 1⅜-in. doors take up only 5 ins. of wardrobe space when open. 2-ft. wide doors project only 1½ ins. beyond front end of wardrobe when open. Bronze guides are cushioned with rubber bumpers to prevent noise. Hardware is furnished in dead black finish.



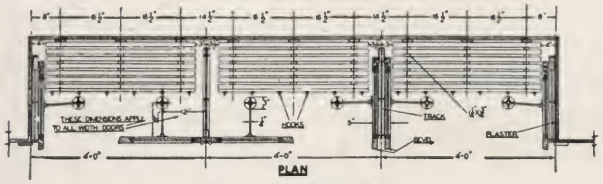
Typical Six-Door Installation



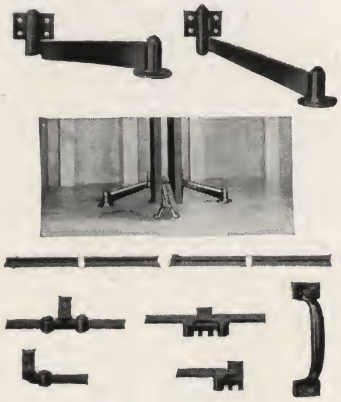
End Elevation



Elevation
Detail of Doors

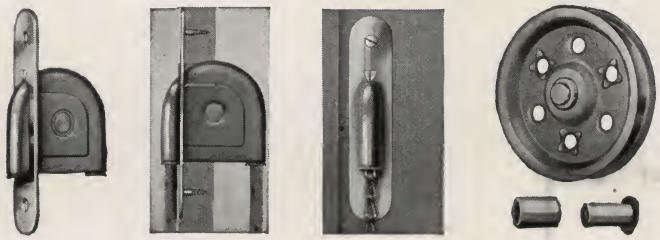


Suggested Floor Plan



Showing Hardware

STANLEY DILLON HEAVY DUTY JAM-PROOF SASH PULLEYS



No. 7001 Wrought Steel; No. 7002 Wrought Bronze

2½-in. wheel—journal bearing

For office buildings, public buildings, schools, hospitals, apartments, etc.

1. Jam-proof. Cord cannot climb wheel.
2. Extra heavy rugged construction.
3. Enclosed—keeps out the cold.
4. Noiseless operation.
5. Finished appearance.

WESTERN PRODUCTS, INC.

Manufacturers of Thomas Swing-In Wardrobe Hardware

NEWCASTLE, IND.

REPRESENTATIVES

BALTIMORE, F. S. Williams, 13 E. Lee Street
BIRMINGHAM, H. L. Gwin, 2201 Comer Building
BOSTON, C. E. Harris Company, 161 Summer Street
CHICAGO, Write Factory Office, Newcastle, Ind.
NEW ORLEANS, H. G. Zimmer, 1811 Robert Street
NEW YORK, Door Hardware Equipment Co., 150 Chambers Street
OMAHA, S. M. Hawkins, Box 300
PHILADELPHIA, E. O. Habhegger, 2636 W. Girard Avenue
SAN FRANCISCO, J. S. Payne, 149 New Montgomery Street
SEATTLE, A. C. Eck Company, 1108 Post Street
ST. LOUIS, MO., Z. G. Shaw, 942 Syndicate Trust Building

Products

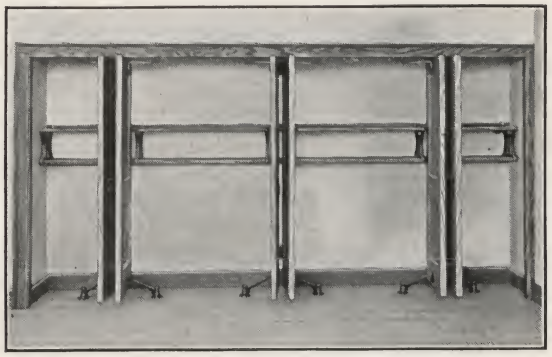
THOMAS SWING-IN WARDROBE HARDWARE.

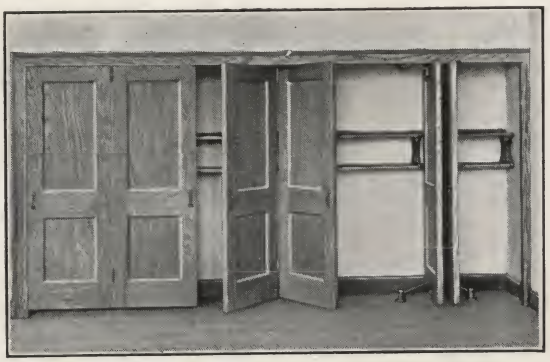
WESTERN OVERHEAD DOOR HARDWARE for PRIVATE and PUBLIC GARAGES.

WESTERN SLIDING DOOR HARDWARE for GARAGE, BARN or INDUSTRIAL DOORS.

WESTERN ACCORDION DOOR HARDWARE for HOMES or PUBLIC BUILDINGS.

WESTERN FIRE DOOR HARDWARE, UNDERWRITERS' APPROVED.



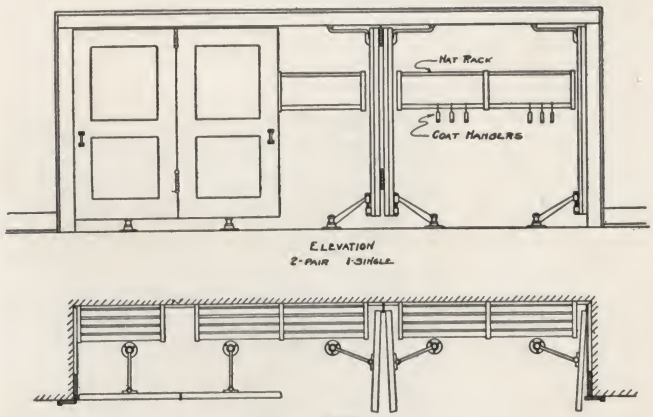


Thomas Swing-In Hardware

Thomas Swing-In Wardrobe Hardware is designed for use on wardrobes having doors of any thickness or height; width varying from 16 to 48 in. (We recommend for simplicity and standardization 2-ft. 2-in. doors.) Doors operate in pairs or singly on full ball-bearing arm hinges which assures smooth, noiseless operation. Pair operation eliminates necessity of mullions or partitions.*

Wardrobes equipped with Swing-In Hardware give assurance of a satisfactory installation. Neat in appearance, correct in design. No guide on the floor. Arms are set sufficiently back in the wardrobe to eliminate any tripping hazard. The upper arms are full floating—all weight being carried on the lower arms which are heavily constructed of malleable iron, having a safety factor of several hundred pounds.

Swing-In Hardware permits building wardrobes to meet any condition of ventilation, whether through top, rear, sides, or through grille in doors, if required.



Note: Plan shows single door at end.

*Detail millwork instructions supplied on request.

Specifications

Hardware Separately—All wardrobes specified on the plans shall be equipped with Swing-In Hardware as manufactured by Western Products, Inc., to include hardware for doors, coat and hat racks, coat hangers, overshoe racks, umbrella racks and pans. To be installed by the contractor. Doors and millwork supplied by the millwork contractor.

Hardware and Woodwork Knocked Down—Swing-In Wardrobes may be furnished with hardware and woodwork knocked down, in the white or finished, to be installed by the contractor. Swing-In Wardrobes are manufactured for recessed openings with plaster or wood backs, ends and ceilings, or for case type wardrobes which project into the room.

A.I.A. Folder furnished on request.

Catalogues and Prices

Write for A.I.A. file size folder showing full description of Thomas Swing-In Hardware and showing its application.

A.I.A. file catalogues of Western Overhead Door Hardware, Sliding Door Hardware, Accordion Door Hardware and Fire Door Hardware gladly sent on request.

Prices will be quoted by any representative or from the factory.

ESTABLISHED 1876

THE J. G. WILSON CORPORATION

GENERAL OFFICES

11 East 38th Street
NEW YORK, N. Y.

P. O. Box 1194
NORFOLK, VA.

CABLE
"Wilcorp, New York"

BRANCH OFFICES

ATLANTA, GA., J. M. Van Harlingen
BOSTON, MASS., The J. G. Wilson Corporation
BUFFALO, N. Y., The J. G. Wilson Corporation
CHICAGO, ILL., H. B. Dodge & Company
HOUSTON, TEX., Walcott-Maisey & Paige
LOS ANGELES, CAL., The J. G. Wilson Corporation
PHILADELPHIA, PA., The J. G. Wilson Corporation
PITTSBURGH, PA., John A. Bricker, Jr.
BALTIMORE, MD., J. M. Butterworth

For Overhead Type and Rolling Doors, and Partitions, see Manufacturers' Index

WARDROBES—DISAPPEARING DOOR AND ROLLING FRONT

The many advantages, and the greater economy of disappearing-door wardrobes over cloakrooms have been generally recognized by architects and educators.

A careful and intensive study by our Engineering staff revealed the fact, however, that while the basic principle was sound, the prime requisite of maximum storage capacity within minimum room space had not been fully comprehended nor met by manufacturers.

TRADE-MARK

With this thought in mind our designers concentrated their efforts upon further perfecting the Disappearing Door type of Wardrobe, as pioneered by THE J. G. WILSON CORPORATION, and now offer for approval a complete new line of School Wardrobes.

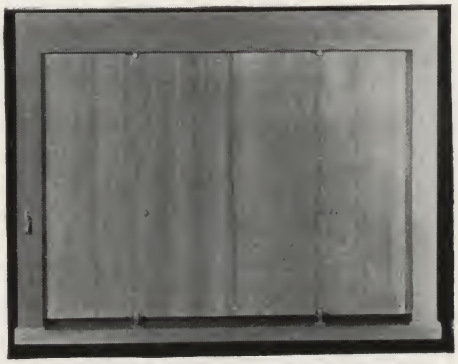
WILSON TYPE H—PAIR OPERATING

The Wilson Type H Wardrobe incorporates all the features such as adequate ventilation, substantial workmanship, ease of operation, and pleasing appearance, which have characterized all Wilson products in the past and found favor with an increasing number of architects daily.

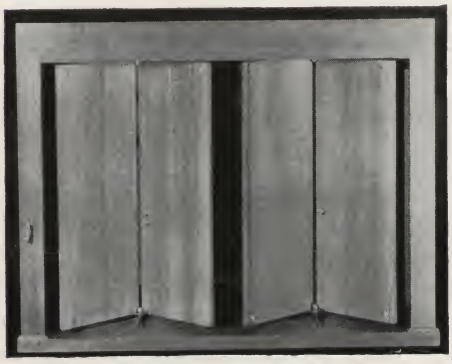
The operating hardware is of rugged construction, built to withstand severe usage. Each pair of doors is supported by an adjustable twin wheel roller-bearing trolley traveling in a straight channel groove overhead track. A floor guide made from solid bronze, to resist chemicals used in cleaning floors, prevents side-sway but does not carry any weight. The stabilizer arms, clearly shown in the cuts, do not afford any obstruction to the interior of the Wardrobe, and may be readily adjusted to absolutely compensate for any bind, warp, or twist that may develop in the door, insuring a smooth, even, flush surface for the reception of continuous blackboards.

As standard equipment for Wardrobes, when slate is not required, each pair of doors is equipped with bronze flush handles. When slate is furnished, a latch may be provided for each pair of doors. A latch engages at the top of the doors and holds the doors in a rigid position.

A group locking device, controlled from the jamb or teacher's closet, may be supplied when desired. A small bronze handle in combination with a cylinder lock is used to simultaneously lock or unlock all the doors. This is a simple and positive means of security.



Wardrobe Doors Completely Closed
Showing uniform line that can be secured if slate is essential



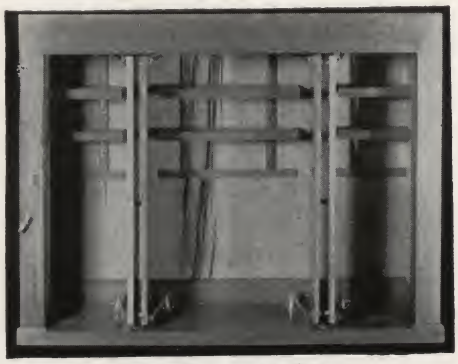
Doors Operating in Pairs

Specifications

The Wardrobes shown on the plans shall be Wilson Type H—pair operated, or group operated—manufactured, completely installed and guaranteed by THE J. G. WILSON CORPORATION.

Doors to be of panel construction, 1⅜ in. thick, veneered on built-up cores; panels to be 3-ply, ¼ in. thick.

Hardware—Door operating hardware shall consist of a straight overhead channel groove, metal track securely mounted to the head frame, which shall support the weight of the doors by means of adjustable twin-wheel roller-bearing trolley hangers attached to the door.



Doors Completely Open



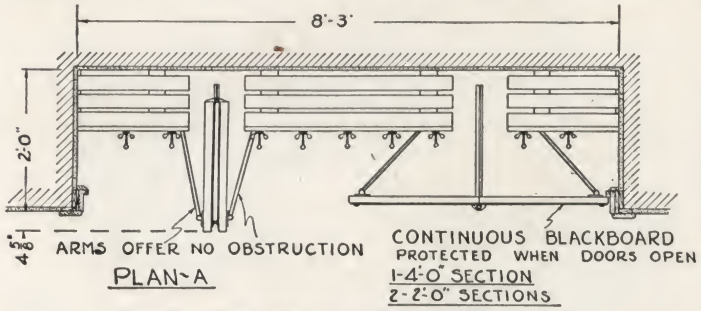
Wilson Operating Mechanism

Doors to be guided, aligned, and stabilized by means of rigid adjustable arms, two to each door. Design and location of arms to be such that they afford no obstruction to interior of Wardrobe.

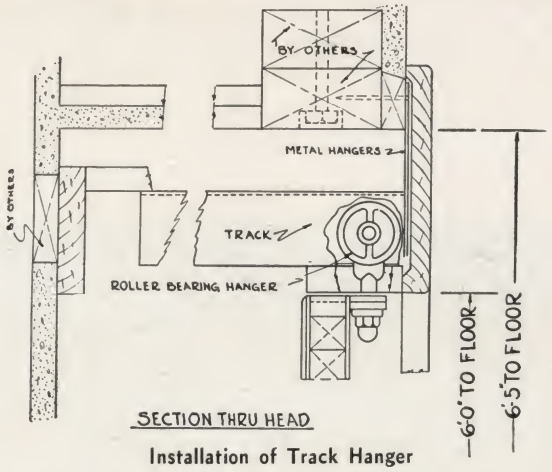
Finish Hardware—A latch, controlled from a bronze handle, shall be provided on each pair of doors, when doors are equipped with slate. When slate is not provided, each pair of doors shall be equipped with a bronze flush handle only. As optional equipment, Wardrobe may be equipped with multiple lock centrally controlled.

Operation—The door operating mechanism shall be so constructed and installed as to hold the face of all doors, when closed, in perfect alignment, both vertically and horizontally—providing a continuous, flush surface free from vibration or deflection.

When doors are open, the projection into the room shall not be more than 5 in., which projection shall never be exceeded during the complete travel of the doors from open to closed position. When doors are open, the outer surface of each door shall be fully protected by the corresponding position of the adjacent door.



Plan Showing Operation of Type H Wardrobe

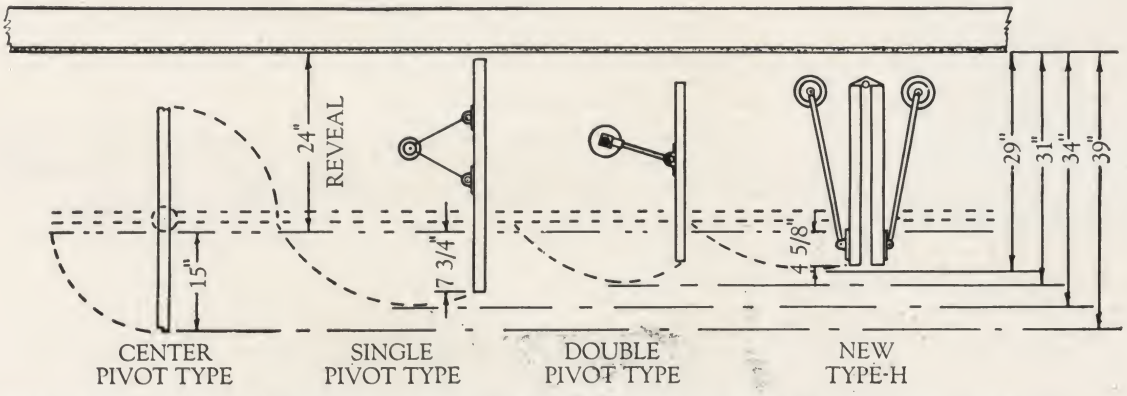


Installation of Track Hanger

Chart

Reference to the chart clearly indicates the various types of disappearing door Wardrobes as manufactured and sold in the present day market. It will be noted that the Wilson Type H will materially reduce the cubic-foot space of the building, yet will afford equal space within the wardrobe for storage purposes.

The projection of the door into the room, when fully open, is less than other types. Consequently, for a given seating capacity, the room size may be smaller and no resulting interference in the aisleway passage is evident.



COMPARATIVE SPACE REQUIREMENT FOR SWING OF WARDROBE DOORS

WILSON TYPE F—SINGLE DOOR OPERATION

School authorities sometimes recommend the single operating, or 4-ft. space, wardrobes and for this type of installation we recommend what is known as Wilson Type F.

This wardrobe is built in units of 2 ft. or 4 ft., the latter accommodating fourteen pupils with ease; and when a reveal of 2 ft. 2 in. deep is provided, no part of the wardrobe door is encroaching on the aisle space when in fully open or fully closed position. The doors operate easily in a single unit on simple but substantial ball-bearing hangers, free from complicated mechanisms requiring minute adjustment.

Specifications

Wardrobes shown on the plans shall be Wilson Type F, Single Operation, manufactured, completely installed, and guaranteed by THE J. G. WILSON CORPORATION.

Doors to be of panel construction, 1⅜ in. thick, veneered on built-up cores; panels to be 3-ply, ¼ in. thick. Doors shall be hung on Wilson standard Type F operating mechanism, consisting of steel curved tracks, adjustable hangers, floor pivot arms, and stabilizer hinges and rods.

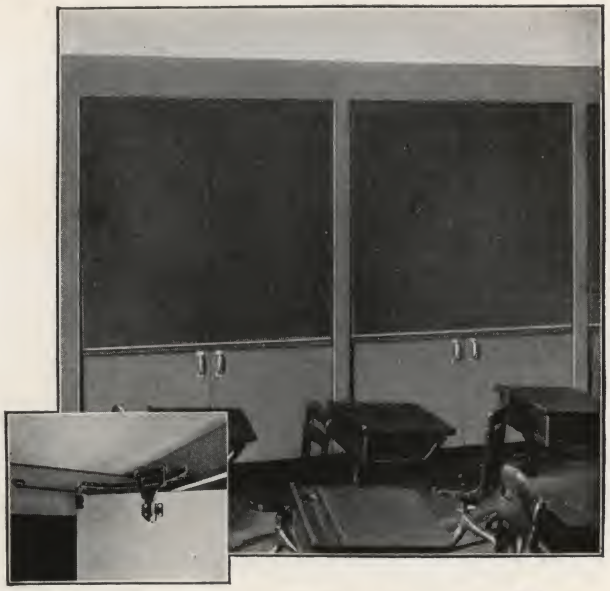
Hardware finish to be dull black.

Each 4-ft. section shall be provided with one 14-in. and one 8-in. slatted shelf, one hook strip, and fourteen coat and hat hooks.

Teacher's closet shall be equipped with drawers, shelves, and coat hooks, to be furnished where indicated in connection with wardrobes; and shall include lock and two keys.

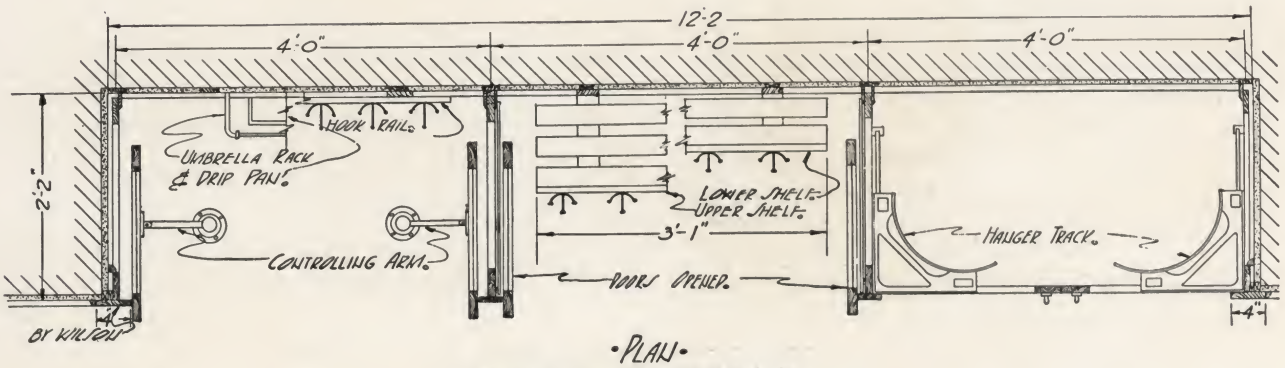


Type F in St. Anthony's School, Gardenville, Baltimore, Md.
LUCIUS WHITE, Architect



Detail of top track showing ease and sturdiness of door operation. All hardware made in our plant

St. Vincent's Parochial School, Newport News, Va.
A. BYRON WILLIAMS, Architect



"PLAN"

Details Wilson Type F Wardrobe

WILSON ROLLING FRONT WARDROBES

Where the question of keeping down the cost of a building, and at the same time providing the best possible material, is paramount, the Wilson Rolling Front Wardrobe is recommended.

These wardrobes have been manufactured since 1876 and have been used successfully in a great many buildings of inexpensive character, and they are still being used to keep within the appropriation.

They may be used in recesses, or against the wall as in corridors, and they may be had complete with backs, ends and divisions, or with the Rolling Fronts only, with or without interior equipment.

Construction

They are made in 4-ft. units with a slatted top shelf 15 in. wide, a lower shelf 10 in. wide and a hook strip below and are provided with 14 hooks per 4-ft. section.

Each 4-ft. section has a Rolling Front, which is raised and lowered by a handle on the bottom rail.



Crossman School, Detroit, Mich.
MALCOLMSON & HIGGINBOTHAM, Architects

For additional blackboard surface, a portion of the front can be made with a flat, smooth surface finished with black silicate. This can be used with the same satisfaction as a slate or composition blackboard.

The fronts are made to stop 3 in. above the floor, providing sufficient air intake space for ventilation, the recess being connected with the ventilating system.

Backs of wardrobes may be paneled.

Separate sections 4 ft. wide, or 2 ft. if necessary, may be furnished for the teacher's use or for storage of stationery, etc.

ANDREW HOFFMAN

5034-36 State Street, CHICAGO, ILL.

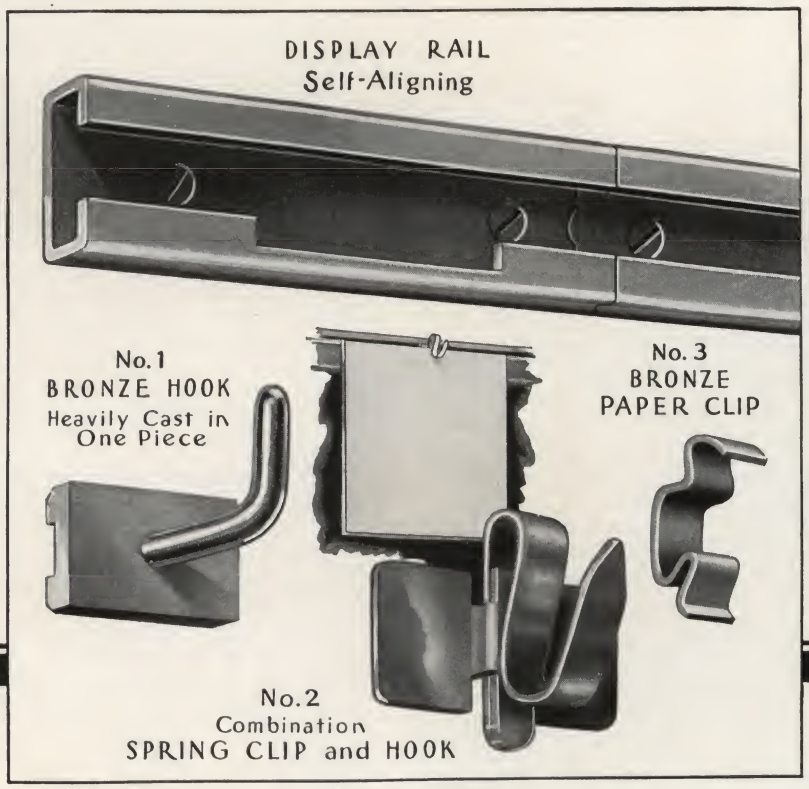
For Casement Window Hardware, see Manufacturers' Index

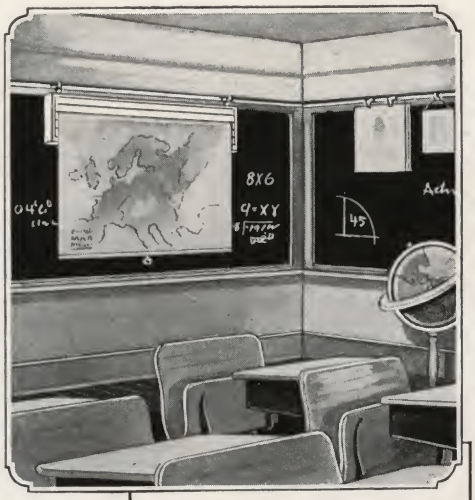
The Ideal Map and Display Rail

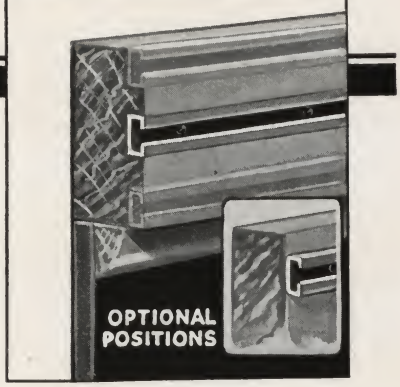
Used in Schoolrooms, Offices, Conference Rooms, Hospitals

Purpose

The Andrew Hoffman display rail is applied to the walls on old or new trim at a convenient height, for the purpose of hanging map cases, maps, charts, posters, bulletins, drawings, and things of a similar nature.







The Ideal Map and Display Rail

Used in Schoolrooms, Offices, Conference Rooms, Hospitals

Description

This display rail consists of a substantial steel rail of special channel section, in which slide hooks and clips. In schoolrooms, the rail is screwed to the trim at the top of the blackboards. In rooms without blackboards, it is screwed at a convenient height to trim, grounds, or directly to the wall. The screws, which we furnish, are closely spaced for maximum strength.

Three types of hooks provide the most efficient hanging for various articles: (1) to support the heaviest map cases without bending or twisting—furnished one to each five feet of rail; (2) as a hook to carry lighter map cases or individual charts and as a heavy spring clip to display large drawings or posters—furnished one for each two and one-half feet of rail; (3) inexpensive paper clip to exhibit small drawings, sheets of paper, etc.—furnished two for each foot of rail.

Hooks No. 1 and No. 2 may be inserted or removed from the rail through the notches. The bodies of the hooks are inside of the rail; consequently the hooks slide freely without interference, and the appearance is neater. The paper clip, No. 3, is inserted and removed anywhere in the rail with the article being displayed.

Finish

The display rail is finished in statuary bronze to harmonize with the trim customarily used.

Advantages

This display rail is designed and built to give a lifetime of satisfactory and trouble-free service.

Thumb tacks and cork pads are eliminated by the use of hooks Nos. 2 and 3. When the spring hook is lifted, the poster, etc., may be placed beneath, where it is held firmly, yet without injury, by spring pressure, which is, we believe, the only permanently satisfactory method.

The rail may be mortised or rabbeted in any position on the face of the trim or may be screwed to the surface. The rail should be mortised in a groove to attain the most attractive appearance. A mortised rail blends into the ensemble so completely as to be very inconspicuous. See optional positions in small drawing.

The sections of the rail are self-aligning, through the use of the dovetail joint, thus assuring the smooth passage of hooks and clips. Being firmly fastened with screws, the rail cannot pull loose.

It is extremely versatile in its use: the three different hooks provide for the display or hanging of anything from a sheet of paper to a map case weighing 100 lbs. or more.

Sizes

The display rail comes in sections 30 in. long. It is ⅞ in. wide and $\frac{5}{16}$ in. deep. If the rail is to be mortised, the mortise should be only ¼ in. deep to prevent the hooks from scratching the trim.

ASBESTOS INSULATING COMPANY

Astor at Main Street
NORRISTOWN, PA.

EXCLUSIVE DISTRIBUTORS OF

Masters All-steel Stationary and Sliding Blackboard and Bulletin Board Frames

Description

Masters All-steel Blackboard Frames eliminate *all* the difficulties usually experienced with the use of ordinary blackboard frames. Their construction features are shown by the accompanying installation photograph and detail drawing.

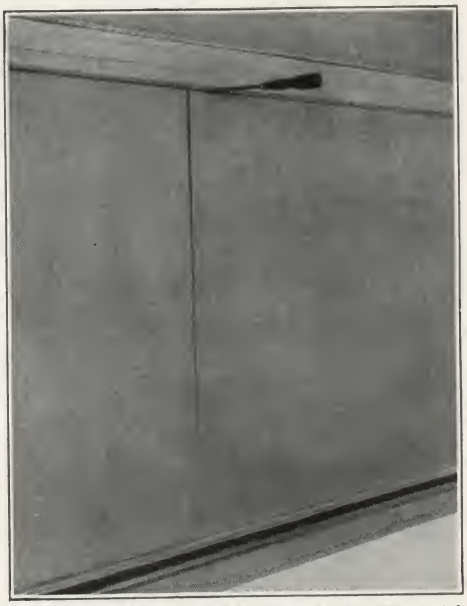
Masters All-steel Blackboard Frames are built solidly into the wall. There is no possibility of anything coming loose, no risk of warping to throw boards out of alignment or cause cracks for the accumulation of dirt, no sinking under continued weight or pressure after years of service, no absorption of moisture.

Nearly all difficulties in the usual type of blackboard frame can be traced back to the foundation strip or ground, since it is almost impossible to fasten this securely enough to modern fireproof wall construction to carry the extreme weight placed upon it. Masters All-steel Frames use an 18-gauge cold rolled steel channel which acts as the plaster ground and blackboard frame and is bolted, toggled or screwed to the bare wall before plastering. The expense of resetting and reblocking of boards, commonly required every few years with other frames, is entirely obviated.

Masters All-steel Blackboard Frames are made entirely of steel. They are quickly and easily installed by any mechanic. They combine rigidity with strength. The steel clamps, shown in the detail drawing, permit perfect and permanent alignment of boards to an even surface.

Replacement of boards, should it be required, is made without difficulty. Waterproof cement may be used in the joints of boards instead of the solvent glue which must be employed with ordinary frames.

The perforated chalk tray of Masters All-steel Blackboard Frames does away with the old-fashioned weekly cleaning of eraser dust. Once-a-year cleaning is sufficient, and this is quickly accomplished by vacuum cleaner or by unhooking the tray and emptying it.



No Loose and Sagging Blackboard Like This with Masters Steel Frame

Advantages—The features which make Masters All-steel Blackboard Frames superior to ordinary frames are: the ease of installation; permanence, life as long as the building; economy, absence of repairs and maintenance costs; sanitation; ease of access should replacement of boards be required; appearance which adds distinction to walls in which installed.

Sizes and Installation—Masters All-steel Blackboard Frames are made to accommodate boards of all dimensions and thicknesses. They work equally well with all types of blackboard material—slate, black glass, or composition. The variations in thickness of slate blackboards are provided for by the clamps, shown in the detail drawing, which force the face of the board with a constant pressure against a straight bead. Thus the surface of a board $\frac{3}{16}$ in. thick will match perfectly with that of an adjoining board $\frac{7}{8}$ in. thick.

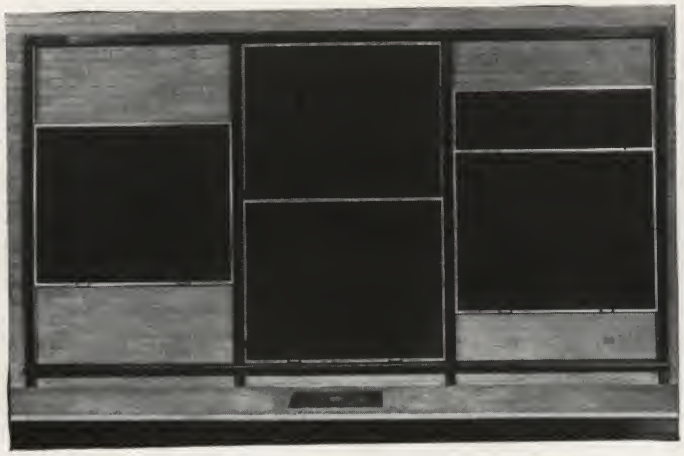
Finish and Cost—All concealed parts of these frames receive a baked prime coat. In specifying, the architect should state the finish to be given the exposed surfaces. Any kind of finish can be applied and our method of construction at corner eliminates cut edges from showing.

The elimination of wood grounds in the Masters All-steel Blackboard Frames has placed their cost of installation on an equal basis with any good wood installation. Over long periods of service their economies reduce cost to a much lower level than that of wood frames.

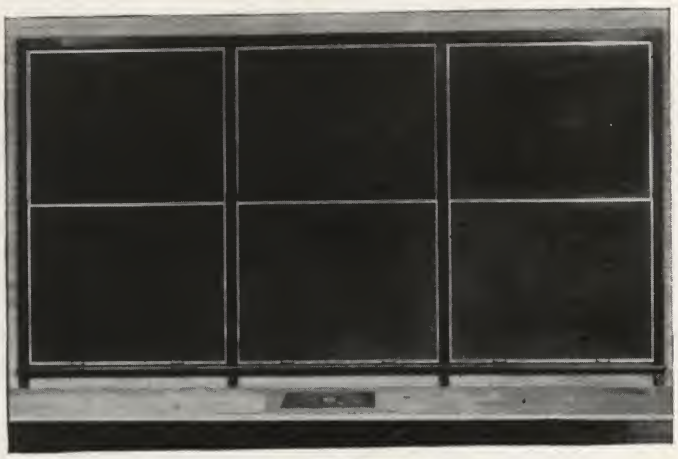
Specifications

Architects will cover all necessary points of installation for blackboards if they include in their specifications the following:

"Blackboards shall be installed in MASTERS ALL-STEEL BLACKBOARD FRAMES, Type ..... (select type desired) with [without] perforated chalk tray. Finish shall be ..... (state finish desired). Frames shall be installed in accordance with the directions of the MASTERS STEEL FRAME COMPANY which will accompany all shipments."



Boards in Various Positions

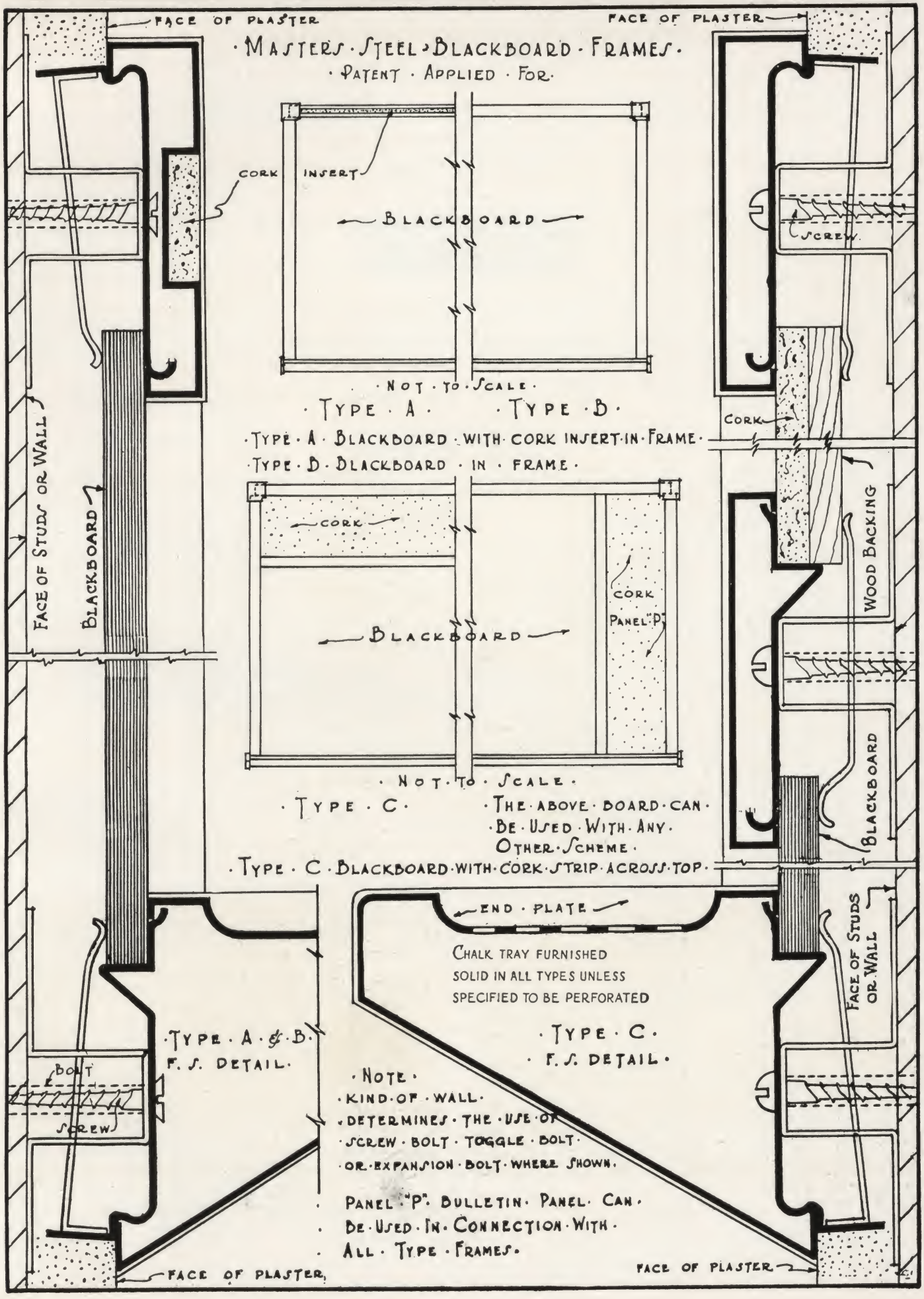


Movable Boards in a Raised Position

Installations in the Science Building, Ursinus College, Collegeville, Pa.

FRANK R. WATSON, EDKINS & THOMPSON, Architects

This design consists of three adjoining units, but can be carried out with two units or a single unit, as desired.
This arrangement of blackboards is particularly applicable to lecture work in universities, colleges, preparatory schools, high schools, etc. It may also be used with three boards, having all three movable, or one stationary and two movable. Perfectly balanced so that it can be raised or lowered with one hand. Additional information gladly furnished.


FACE OF PLASTER
FACE OF PLASTER
MASTERS STEEL BLACKBOARD FRAMES
PATENT APPLIED FOR
CORK INSERT
BLACKBOARD
SCREW
NOT TO SCALE
TYPE A
TYPE B
TYPE A BLACKBOARD WITH CORK INSERT IN FRAME
TYPE B BLACKBOARD IN FRAME
CORK
FACE OF STUDS OR WALL
BLACKBOARD
CORK
BLACKBOARD
CORK PANEL "P"
WOOD BACKING
NOT TO SCALE
TYPE C
THE ABOVE BOARD CAN BE USED WITH ANY OTHER SCHEME
TYPE C BLACKBOARD WITH CORK STRIP ACROSS TOP
END PLATE
CHALK TRAY FURNISHED SOLID IN ALL TYPES UNLESS SPECIFIED TO BE PERFORATED
FACE OF STUDS OR WALL
BLACKBOARD
TYPE A & B F. S. DETAIL
TYPE C F. S. DETAIL
BOLT
SCREW
NOTE
KIND OF WALL DETERMINES THE USE OF SCREW BOLT TOGGLE BOLT OR EXPANSION BOLT WHERE SHOWN.
PANEL "P" BULLETIN PANEL CAN BE USED IN CONNECTION WITH ALL TYPE FRAMES.
FACE OF PLASTER
FACE OF PLASTER

BECKLEY-CARDY COMPANY

Manufacturers of Blackboards, Bulletin Boards, Map and Bulletin Rails and School Equipment

17 East Twenty-third Street
CHICAGO, ILL.

SLATEBESTOS

Quality—A new standard of excellence for blackboards. Hard as rock, and its dark slate color permeates the entire board.

Permanence and Durability—Base is a combination of asbestos fiber, hard minerals and cement which actually improves with use. Slatebestos will last as long as the building; is equally as durable as natural slate, more fire resistant and less subject to breakage.

Color and Writing Surface—Slatebestos is solidly built throughout its full $\frac{3}{16}$-in. thickness. Its writing surface is produced through a series of liquid blackboard surfacing coats, which penetrate the body of the board.

Easy to Install—Installed on any kind of straight wall and it is very easy to put up.

Joints can be made secure so that writing over them is always possible.

Sizes and Weights—Standard widths 3½ and 4 ft.; lengths, 5, 6, 7 and 8 ft.; thickness $\frac{3}{16}$ in. Weight approximately 2¼ lbs. per sq. ft. Samples on request.

SLATEROCK BLACKBOARD

Description—Consists of a core of pure gypsum rock compressed between two sheets of tough mineralized fiber board. It has a hard, velvety writing surface of uniform color. The surface is long wearing, does not reflect light and contains a sufficient amount of grit to insure easy, rapid and legible writing. Costs one-half as much as natural slate and weighs approximately one-third less. Furnished in black or green.

Easy to Install—It is true and straight, cannot warp, crack or buckle and is not affected by atmospheric changes; can be easily installed on any smooth wall.

Durability—There is no breakage with Slaterock and it will last as long as the building.

Sizes and Weights—Standard widths, 3, 3½ and 4 ft.; lengths, 5, 6, 7 and 8 ft.; thickness, ⅜ in. Weight, approximately 2½ lbs. per sq. ft. Samples on request.

SLATOPLATE

Description—Slatoplate is a wood pulp composition blackboard. Made of new, pure wood fibers, hardened and toughened by special processes, kiln dried, waterproofed and surface filled.

Writing surface is hard, close grained, uniform in color and makes clear, legible mark. Colors, black or green. Slatoplate will not warp, pit, peel, crack, wear shiny, change color or lose its splendid writing surface. Cannot be easily indented and corners will not split. Writing can be easily erased and board can be installed on any smooth wall.

Sizes and Weights—Standard widths, 3, 3½ and 4 ft.; lengths, 5, 6, 7, 8, 9, 10 and 12 ft.; thickness, ¼ in. Weight, approximately 1 lb. per sq. ft. Samples on request.

Blackboard Guarantee

We guarantee our blackboards when properly installed and cared for according to our printed instructions to render satisfactory service. Blackboards are free from any defects in manufacture, including warping, buckling, shrinking or expanding. Writing surface will give satisfaction for ten years or more without upkeep cost. Boards will retain their velvetlike writing surface and at no time will this crack, pit, peel, fade or chip off or wear shiny or glossy. Should blackboard fail to give the service indicated it will be replaced, resurfaced or otherwise adjusted to the complete satisfaction of the purchaser at our expense.

Simplex "H" Bar Metal Joining Strips for Blackboards

Suitable for covering inconspicuously the joints of Slatebestos, Slaterock and Slatoplate blackboards.

Simplex Bulletin Boards and Tack Strips

Description—Simplex Bulletin Boards are made uniformly ¼ in. thick of pressed cork of unvarying color and resiliency, cemented to burlap backing.

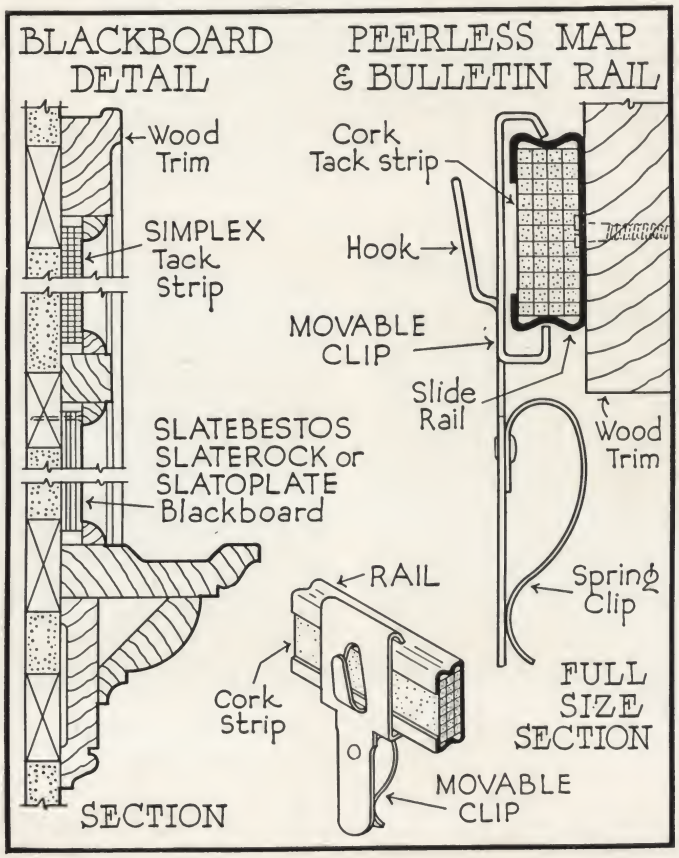
Simplex Bulletin Boards will not warp, curl or buckle and when soiled can easily be cleaned with soap and water. They are easy to install by cementing to the wall or nailing along all edges before putting the tack moulding in position.

Sizes and Colors—Regularly made and carried in stock in 6, 9, 12, 14, 18, 24, 30, 36 and 48-in. widths and lengths cut to fit spaces up to 60 ft. without joint. Furnished in light brown or green color. Samples on request.

Duplex Bulletin Boards and Tack Strips

Description—Made in ½-in. thickness, consisting of ¼-in. sheet cork cemented to special ¼-in. three-ply wood backing.

Sizes and Colors—Regularly made and carried in stock in 12, 18, 24, 30, 36 and 48-in. widths and in 48, 60, 72, 84 and 96-in. lengths but may be had in any size up to 48x96 in. Boards larger than 48x96 in. furnished in sections. Furnished in light brown or green color. Samples on request.



Peerless Map and Bulletin Rail

Description (see detail)—This rail is made of heavy gauge steel finished in durable, dull brown enamel (special colors on order) carrying a renewable ¼ in. thick cork strip for thumb tacking bulletins, drawings, etc. In addition, removable (sliding) clips are provided which may be spaced at will. The face of clip is provided with a sturdy hook for hanging heavy maps, etc. Each clip is also provided with a leg carrying a spring steel clip for attaching pendant printed matter, without the necessity of puncturing with thumb tacks. Rail is attached by concealed screws to the top blackboard trim.

Sizes—1 in. track face width (⅝ in. cork face exposed), ⅜ in. deep (front to back), furnished in 4 or 6 ft. lengths.

MASTER SPECIFICATIONS FOR BLACKBOARDS

(A) PRELIMINARY PROVISIONS

(A1) Include Under Carpentry Work

(A1a) All blackboards, except as hereinafter otherwise mentioned, will be furnished and set by others.

(A1b) The following blackboards will be furnished cut to size and crated separately by the Blackboard Contractor to be set by this contractor who shall be entirely responsible for their good condition after delivery.

Note: *Here list blackboards which are to be set by the Carpentry Contractor, such as those in wardrobe or other door panels, etc.*

The list and sizes (allowing ¼-in. clearance) shall be furnished by the Carpentry Contractor to the Blackboard Contractor.

(A1c) Provide accurately set grounds, in accordance with the detailed drawings, surrounding all blackboards and cork tack boards and bulletin boards. These grounds shall not only form proper nailing base for the blackboard trim, but shall provide space at top for fastening blackboards and form accurate screeds for plaster surfaces back of blackboards.

(A1d) Plug the wall back of blackboard joints with three wooden plugs set 12 in. apart below the wood grounds.

(A2) Insert Under Lathing and Plastering

(A2a) This contractor shall check all grounds for blackboards as specified under division of "Carpentry Work." Thickness of grounds shall be such that plastering back of blackboards is flush with surfaces of grounds.

(A2b) Plaster, flush with grounds, all surfaces back of blackboards. Plaster surfaces shall be in a true plane without projections beyond the face of ground work.

(A2c) Wherever blackboards are applied against unplastered masonry walls, provide a backing of insulation board.

(B) BLACKBOARD SPECIFICATIONS

(B1) Materials

(B1a) Blackboards — Blackboards shall be [*Slatebestos*], [*Slaterock*], [*Slatoplate*] as manufactured by BECKLEY-CARDY COMPANY, 17 East Twenty-third Street, Chicago, Ill.



SIMPLEX "H" BAR METAL JOINING STRIP (Full size) Thickness varies with type of board

All blackboards shall have perfectly true and uniform surfaces, free from defects and from depressions or projecting particles. Joint edges shall be sharp and make 90-degree angles with top or hanging edge.

(B1b) Cement—Cement for spot cementing shall be Beckley-Cardy's "B-C" No. 4 Blackboard Cement.

Note: *Omit if Slatoplate or Slaterock is specified.*

(B1c) Metal Blackboard Joints—Blackboard joints shall be made with Simplex "H" Metal Joining Strips as manufactured by BECKLEY-CARDY COMPANY.

(B1d) Tack Board—All tack strips and bulletin boards shall be BECKLEY-CARDY COMPANY'S [*Simplex Bulletin Boards and Tack Strips*] [*Duplex Bulletin Boards and Tack Strips*].

(B2) Sizing

On outside walls, not furred and not dampproofed back of plaster, thoroughly size the plaster surface back of blackboards with glue sizing.

Note: *Include wherever dampness is apparent or possible sizing is advisable, otherwise the special spotting cement may be affected.*

(B3) Setting

(B3a) The setting, leveling and cutting of blackboard installations shall be in accordance with the manufacturer's recommendations and standard specifications furnished with each shipment.

(B3b) Blackboards shall not be set until the plaster *is completely dry* and the final coat of finish has been applied and has dried on the wood blackboard trim (except loose tack mould).

(B3c) All blackboards shall be set by experienced mechanics. All edges shall be adequately covered by the loose tack mould. The writing surfaces shall be plumb and in a true plane with ⅛-in. clearance at top and ⅜-in. clearance at bottom and ends.

(B3d) All blackboards shall be hung from top edge only. Slatoplate and Slaterock shall be securely nailed to top ground with 4d wire nails, placed ⅜ in. from edge and not over 18 in. on center. Boards showing splits at nailing points below the finishing tack mould will be rejected and must be replaced at this contractor's expense.

(B3e) Slatebestos shall be screwed at top edge only through drilled holes in boards, ¼ in. from top, using ¾ in. No. 5 flat head screws. The balance of Slatebestos Blackboard Surface shall be secured to wall in the following manner: cement back of blackboard in two rows of round spots about 3 in. in diameter and at a distance of 15 in. from top and bottom edges. Cement must not get into joints or on the surface.

(B3f) The boards shall be firmly pressed in position over the cement and leveled plumb and true. Sufficient pressure shall be applied to assure thorough adhesion without springiness for the entire surface. After boards have been cemented into position, all tack moulding shall be immediately set in place and securely bradded.

(B3g) [*Slaterock*] [*Slatoplate*] shall be nailed at top edge only, nails to be not over 18 in. apart and spaced according to location of studding or grounds. Then secure [*Slaterock*] [*Slatoplate*] in position with tack moulding on all sides.

(B3h) All tack mould shall be carefully and accurately bradded in position by this contractor with firm, continuous contact at all edges and with brads neatly set for puttying.

(B4) Joints

(B4a) Metal Joint Moulding—All joints shall be made with Simplex "H" Bar Metal Joining Strips.

After plugs are in place and the blackboards ready to set up, attach the joining strip to one end of the blackboard and then nail through the wing of the strip into the plugs. Place the next section of board into the groove of the strip and level and plumb the board. Continue the operation until all joining strips are in place. Allow ⅛-in. space at each joint when installing joining strips. Joining strips with surface imperfections or which are warped out of line shall not be used.

(B5) Tack and Bulletin Boards

Set all cork tack and bulletin boards in accordance with directions. Where joints are required, same to be spaced symmetrically to correspond with blackboard joints and shall be covered with a thin strip of wood to match trim. Apply tack mouldings surrounding tack and bulletin boards as specified above for blackboards.

(B6) Final Cleaning

After the painter has applied the final coat of finish to the tack mould, this contractor shall do the final cleaning of all blackboard surfaces, charging the reasonable cost thereof to those responsible for any damage. All varnish spots or streaks shall be removed with steel wool; apply Beckley-Cardy Special Blackboard Surfacer, rubbed down with fine pumice and water, blending the spots with the rest of the board surface.

(B7) Direction Plate

Fasten permanently in each room, the metal plate; furnished by the blackboard manufacturer, bearing directions for breaking in and taking care of blackboard surface. Location on moulding of blackboard as directed by architect.

NATURAL SLATE BLACKBOARD COMPANY

PEN ARGYL, PA.

BRANCH OFFICES AND DEALERS IN PRINCIPAL CITIES

Advantages of Slate for Blackboards

The natural characteristics of slate quarried in the Lehigh and Northampton Counties of Pennsylvania in the United States make it particularly and peculiarly suitable for blackboard purposes. The smooth, even dark finish provides an ideal writing surface upon which chalkmarks are clearly legible and from which they may be erased easily and cleanly. The compact structure, toughness and flexibility of slate guarantee maximum resistance to curling, cracking and buckling as well as to strain, shock, blows and the effects of settlement.

"CENTURIES OF SERVICE"
PYRAMID NATURAL SLATE BLACKBOARDS
Proof against Time - Wear - Water - Fire!

Slate is one of the least absorptive of nature's products and therefore is impervious to moisture. This assures a surface which will not warp under repeated cleanings. Natural slate blackboards cannot wear out and will not require replacement—the first cost is the only cost.

Identification

The "Pyramid" brand, which is the name given to all slate furnished by the NATURAL SLATE BLACKBOARD COMPANY and which is identified by a label on each slab, guarantees the strict enforcement of the most rigid rules of workmanship and inspection and protects the architect from receiving imported blackboards. The lime content of slate quarried in the United States is less than 4 percent, while the lime content of foreign slates is from 24 to 26 percent, which will cause such slate to inevitably bleach to a light color. Hence the desirability of specifying a "Pyramid" blackboard.



A Typical Class Room, Teachers College, Buffalo, N. Y.
William E. Haugaard, Commissioner of Architecture, New York State

Setting Methods

In order that natural slate blackboards may be erected to give lasting satisfaction, this Company, with the Structural Service Bureau of Philadelphia and its collaborators, has developed setting methods and directions as well as setting and jointing compounds which are marketed under the "Pyramid" trade-mark. The essentials of the directions are embodied in these pages and more detailed instructions will be sent on request.

Heights and Areas of Blackboards

Many states and most of the larger cities have adopted general but varying requirements for the height of chalk rails and the area, height and length of blackboards. The Structural Service Bureau and its Consulting Architect, D. Knickerbacker Boyd, has recently collected and codified these data and other authoritative information representing latest practice and compiled a new publication "Visual Education". Requirements and recommendations for blackboard areas and the lengths and areas of bulletin boards and tack strips are included as well as descriptions and illustrations of special blackboards for drawing rooms, music rooms, sewing rooms, etc. Copies of this booklet may be had upon request.

NOTES ON THE SPECIFICATION WHICH FOLLOWS

The following specification for Natural Slate Blackboards is recommended in connection with the Spotting and Bedding method, with plastered backgrounds—generally conceded to give best results and lasting satisfaction. Widths, or lengths, of slate slabs as covered by U. S. Department of Commerce publication on Simplified Practice No. 15 are made a part of this Specification.

A complete specification, such as here offered, for the furnishing and setting of slate blackboards (and cork bulletin boards, etc.) affects the work of several different trades. It is therefore suggested that "Blackboards and Their Accessories" be incorporated under one separate heading in Architects' Specifications in which, under other appropriate sub-headings, the respective requirements on the part of those trades involved by blackboard installations can be included by reference. Such a separation and reference would make it possible for blackboards to be furnished and set by Tile, Slate and Marble Contractor (or Sub-Contractor) or by Carpenter Contractor or General Contractor, according to local practice.

The Specification which follows has been drafted accordingly and among suggestions for inclusion under other headings are the following: Provide that all walls, partitions, etc., and all grounds for blackboards shall be plumb, level, secure and in true plane ready to receive slate. Specification for Carpentry and Millwork should call attention to requirements of the Blackboard Specification in regard to wood plugs or wood nailing strips (see Masonry if metal wall plugs), grounds, trim, etc., to be furnished and securely set, and kinds of wood, as well as provide for frames, boxes, counter-balances, etc., when any sliding blackboards are included. If trims, or any sliding blackboards, are of metal, they should be specified in the appropriate section. Where bulletin boards, tack-strips, cabinets, shelving, etc., are contiguous to or associated with the blackboard installations, similar provision should be made in other parts of Architects' Specifications for grounds, trim, finish, etc., and bulletin boards themselves included in the text and title of this blackboard specification.

Under Masonry the setting of wood blocks or nailing strips, or furnishing and setting of metal wall plugs, to be built into walls for securing of grounds, should be provided for. Under Painting the finishing of exposed portions of frames and trim should be provided for, and under Plastering it should be provided that scratch and brown coats, with a floated finish to a thickness of ½ in., shall be applied to walls back of blackboards (and trowelled smooth back of bulletin boards, tack-strips, etc.)—which walls shall be lathed where wood studs, or wood or metal furring occur.

It is essential that spotting and joint and edge bedding referred to under setting of blackboards be required of Contractor who sets blackboards, and not of Plasterer.

It should be determined whether or not switches, thermostats, etc., are to be placed in wood trims of blackboards or of openings and these trims detailed accordingly. The location of switches, thermostats, etc., should be also shown or specified under electrical work, heating work, etc.

SPECIFICATION FOR NATURAL SLATE BLACKBOARDS

Installed by the "Spotting and Bedding" Method on Plastered Backgrounds.

(See Notes on opposite page)

1. The contractor for this work shall furnish natural slate blackboards and arrange for their complete installation in every class room and in all other portions of the building where so shown or noted on the plans, sections or detail drawing or herein specifically called for.

2. On all walls where blackboards occur they shall be run full from trim to trim, as indicated, exclusive of bulletin boards which shall be (here state size of bulletin boards, if any, at end of blackboards, and later specify the bulletin boards). The heights of the slate itself shall be as follows: (State heights of slate and whether or not tack strips are to be located above in certain rooms, also specify by locations and areas all blackboards required that are not shown by the drawings).

3. Where wardrobes occur, place slate blackboards (surfaced on each exposed surface) in each door, as shown on details, or as follows: (Here describe slate and other panels, etc. unless wardrobes are selected from manufacturers' catalogues showing slate panels and are specified or provided for accordingly).

4. If any sliding blackboards are shown or called for include and install slate in same (state whether or not double faced) and wherever indicated or called for install swinging blackboards with double faced slate, including metal frames, (standards or brackets) etc. complete (Consult manufacturers' descriptions for types, finish, etc. and refer to same).

5. The slate shall be quarried in the United States and be of the finest quality selected blackboard stock, even in color, free from veinings or imperfections that would impair its use or durability as a marking surface and be not less than ¼ inch nor more than ⅜ inch thick. A maximum deviation of 1/16 inch from this thickness will be permitted when an average thickness of at least ¼ inch is maintained except that double surfaced slate shall be of uniform thickness. The exposed face of each piece of slate shall be carborundum surfaced to a perfect writing plane, in accordance with the Natural Slate Blackboard Company's Standards, and the approval of the architect, and each piece shall be labeled with the "Pyramid" Trade-Mark. Slate shall be furnished with joints ground straight, true and neatly fitted.

6. The lengths or lineal dimensions of the slate slabs in each assembly of blackboards shall be in accordance with the U. S. Department of Commerce Simplified Practice Recommendations No. 15, as follows: Up to 5 feet, one slab; over 5 feet, but not exceeding 9 feet, two slabs; over 9 feet but not exceeding 13 feet 6 inches, three slabs; over 13 feet 6 inches but not exceeding 18 feet, four slabs; over 18 feet but not exceeding 22 feet 6 inches, five slabs; over 22 feet 6 inches but not exceeding 27 feet, six slabs. The joints in each assembly shall be in accordance with the same Departmental Recommendation namely, at or near the middle of the space for two slabs, one third of the space for three slabs, one fourth of the space for four slabs, one fifth of the space for five slabs and one sixth of the space for six slabs. By "at or near" is meant that any slab may be used which places the joint within three inches in either direction of what would be exact spacing of the units stated.

7. The Carpenter Contractor will furnish and securely set all wood grounds to accurate levels and true planes. All wood trim will be furnished by the millman and set by the carpenter. The complete installation shall be in accordance with the architect's details, and with the printed directions, of the "Natural Slate Blackboard Company," consistent herewith.

8. Fasten securely to the walls, kiln-dried wood "ground" strips (¾ inch thick or other thicknesses according to number of coats and kind of plastering) at top, bottom and ends of all spaces to be occupied by blackboards (and intermediate strips as detailed where bulletin boards or tack-strips abut or adjoin blackboards).

9. To the "ground" strips, securely set (1⅜ x 3½ inches) trim, slightly rounded at edges (or as detailed) at the sides and top of all blackboard spaces. (Specify trims in connection with bulletin boards, tack-strips, cabinets, closets, etc. wherever they occur adjacent to blackboards).

10. At bottoms of blackboards place (5½ x 1¼ inches) countersunk chalk troughs carefully leveled, extending under blackboards and securely nailed to "ground" strips and to (4½ inches) molded aprons. Chalk trough shall be (molded or rounded) on all exposed edges and returned at ends (or left open for cleaning), as detailed. (If wire covers are to be installed in chalk troughs specify here).

11. Where slate is set against walls or partitions the space to be occupied by the blackboards will have been plastered by the plastering contractor with a scratch and brown coat, wood or carpet floated, to within not less than ¼ inch of the back of the slate. When these surfaces have hardened, but not until immediately previous to the setting of the slate, they and the backs of the blackboards shall be bedded and spotted with "Pyramid" "Spotting and Bedding Compound", or other approved fibrous, bituminous, plastic compound to a thickness averaging 1/16 in. against wood and ¼ in. against plaster. Each slab of the blackboard shall be pressed into place to form a substantial contact with this material on the edge bedding, joint strips and spotting so that the blackboards will form a solid, continuous, even plane, jointed between each slab as hereafter described. The edge bedding against wood shall consist of one inch wide strips of the compound. The joint bedding shall be a two inch wide strip the full height of each vertical joint and centered thereon. The size of the "spots" shall be from four to 6 inches in diameter and the spots shall be placed at intervals not exceeding 18 inches in each direction.

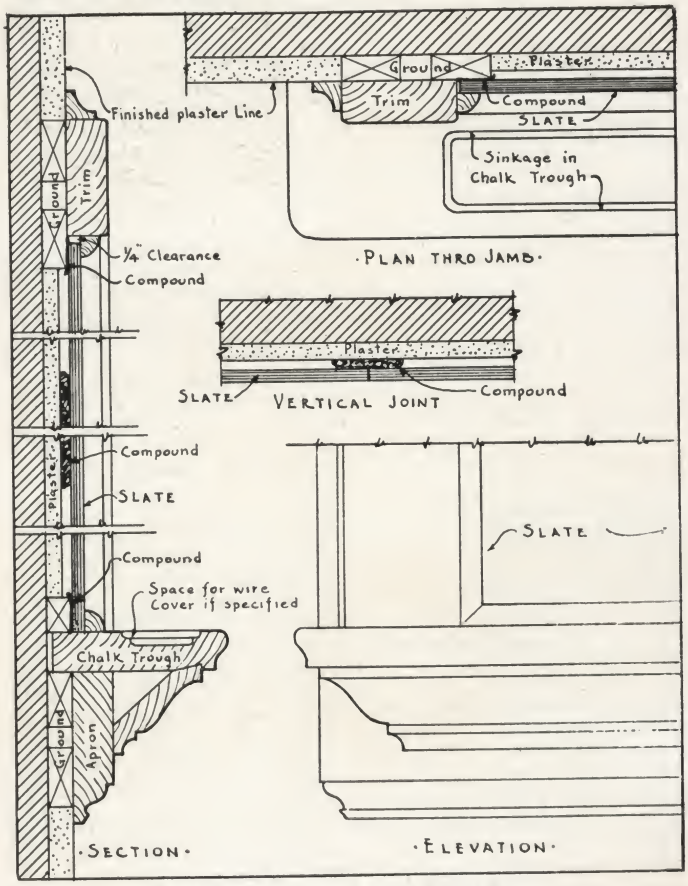
12. As each slab of slate is set there shall be applied to the adjoining joint edges of slate a thin strip of Pyramid jointing compound, and the slab being set shall be tapped tight against the preceding slab till the joint is as nearly invisible as possible.

13. As the blackboards are set, a (⅝ x ⅝ inches quarter-round) shall be well secured to surrounding trims and chalk trough, firmly holding slate in place. Any free-standing end trims and all tops shall be back-banded with (⅞ inches) coved scotia mold (1¼ inches if on frame walls).

14. The slabs at joints between slate, upon completion of setting, shall if uneven be thoroughly honed and finished without humps or abruptness until they have the appearance of a smooth plane with adjoining surfaces.

15. All slate blackboards shall be left whole, sound and clean, ready for use and in every way a complete and satisfactory installation.

16. The contractor for slate-work shall furnish a neat printed Instructions on the "Cleaning and Care of Blackboards" suitably framed, with glass, and permanently fastened in a conspicuous place, where directed.



Typical Detail of Blackboard Installation

Showing back plastering and setting, compound at edges, and "spots"—scale as printed, two inches equals one foot.

FOUNDED 1865

NEW YORK SILICATE BOOK SLATE CO.

TELEPHONE
COrtlandt 7-6484, 4060

20-24 Vesey Street
NEW YORK, N. Y.

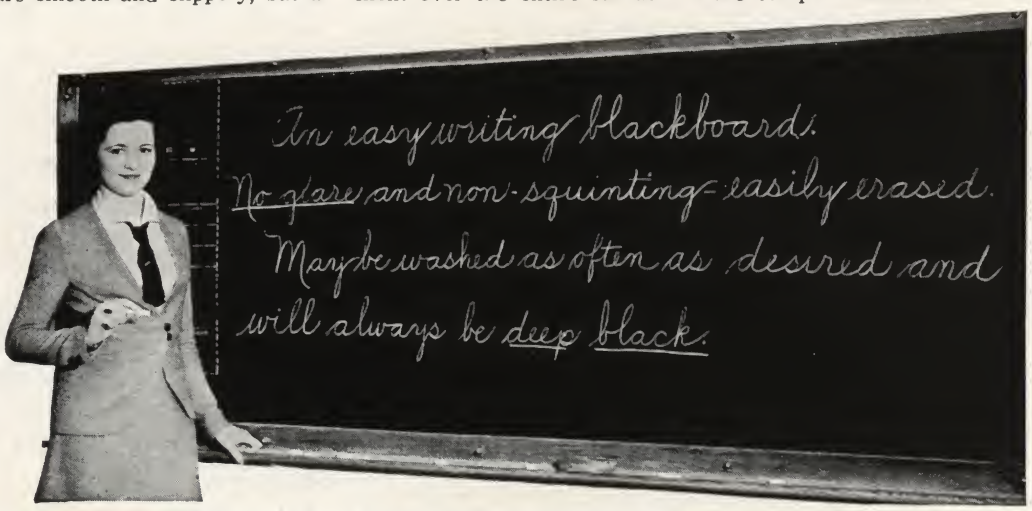
CABLE ADDRESS
"Silibook New York"

FACTORY: HOBOKEN, N. J.

Seloc Glass Blackboards

Made of black plate glass—with a *suspended abrasive* uniformly dispersed throughout the glass *while molten.* Not just a top surface treatment that wears smooth and slippery, but a blackboard that is *perfect surface all the way through from back to front.* Experimental tests equivalent to *100 years' wear* have left Seloc Glass Blackboards as good as new.

Seloc Glass Blackboards can be set in longer lengths than slate — which means fewer joints. Available in lengths up to 8 ft. and widths of 3, 3½ and 4 ft. In weight per foot and price it is the same as slate, but its final cost is lower, as it will never need recoloring or refinishing.



Bonded for 40 Years—Because of our absolute certainty that the perfect writing texture of Seloc Glass Blackboards will never change, and because they will therefore never need refinishing or recoloring, we are arranging to bond all installations for a period of 40 years. This is longer than the life of most schools.

Specifications for Seloc Glass Blackboard—(Spotting and Bedding Installations on Background of Plaster)—

(1) Wherever blackboards are herein specified or indicated on drawings, this contractor shall furnish and install $\frac{5}{16}$-in. thick Seloc Glass Blackboards, as made by the New York Silicate Book Slate Co., 20 Vesey St., New York, N. Y.

(2) Glass blackboards shall be a deep, solid black throughout the entire mass of glass and there shall be uniformly combined and distributed throughout the glass an abrasive material which shall cause the finished surface to remain permanently of the same uniform texture.

(3) Sizes of all blackboards and dimensions of all slab sections shall be as shown on details. Horizontal slab sections shall not vary over 30 in. from an even division of panel length in any case. Sections 8 ft. in length shall not contain more than one panel, and 16 ft., not more than three panels, but may be placed in two panels if desired.

(4) All wood grounds, trim and chalk rails shall be set by others as shown on details, including necessary stops and cover mouldings where blackboards adjoin surrounding trim.

(5) Plasterer shall apply scratch and brown coats to walls or partitions behind blackboards to within approximately ¼ in. of back of blackboards.

(6) Before proceeding with erection of blackboards, this contractor shall see that all grounds, framing trim, and plaster surfaces are true and in proper condition to receive blackboards.

(7) This contractor shall set the blackboards by the spotting and bedding method, using "Seloc Compound" as made by the New York Silicate Book Slate Co., 20 Vesey St., New York, N. Y. Compound shall be applied either to plaster surfaces and grounds or to back of blackboards. Size of "spots" shall be approximately 5 in. in diameter and they shall be of sufficient thickness to make complete contact on walls and glass for the specified area of spots when glass is pressed in place. Where compound is applied to framing grounds it shall be thinly spread to a thickness of about $\frac{1}{16}$ in.

(8) Where abutting joints in glass sections occur, there shall be applied to wall a 2-in. wide strip of compound the full length of joint and edges of glass shall receive a thin film of the compound.

(9) The blackboards shall be set in place and pressed to close contact with Seloc Joint Compound and all abutting joints shall be made up as closely as possible to form perfectly flush hair line joints. All sections shall be in true and even alignment over the entire surface of the complete blackboard. All joints shall be thoroughly filled with this compound, and after setting twenty-four hours shall be rubbed down with a piece of glass and rubbing powder that will be furnished by the New York Silicate Book Slate Co.

(10) All spotting compound shall be removed with a wet cloth from the surface of the blackboards before they have set.

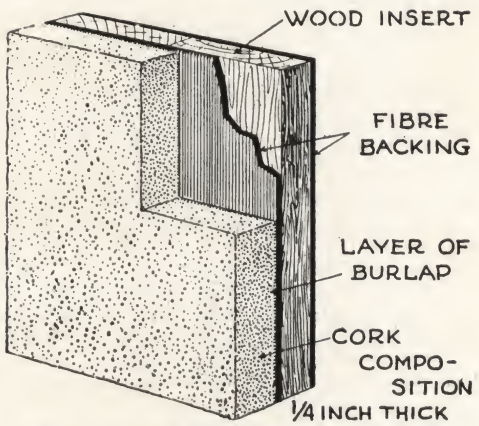
Composition Blackboards—Natural Slate

We manufacture and install composition blackboards and also handle and install natural slate.

Seloc Cork Bulletin Boards

Seloc Cork Bulletin and Tack Boards are among the finest made, and absolutely guaranteed not to warp or bulge. Comes in tan or green, with either polished or unpolished face. They are made of pure cork carpet ¼-in. thick, which is cemented to a ¼-in. Compo Wood back. This type of bulletin board can be permanently guaranteed against warping or bulging. Furnished in any width up to 48 in., and in lengths up to 12 ft.

Unmounted Cork Bulletin Boards or Tack Strips—Same as above, without Compo Wood mounting, but is glued to a heavy burlap backing, and can be cemented directly to wall.



Construction of Seloc Cork Bulletin Boards

E. W. A. ROWLES CO.

Manufacturers of Blackboards, Metal Blackboard Trim, Display Rails and Bulletin Boards

2500 Prairie Avenue
CHICAGO, ILL.

Products

(A) ENDURAROC BLACKBOARD—Composed of asbestos fibre, portland cement, and other indestructible materials.

(B) PERMAROC BLACKBOARD—Body, gypsum rock and mineralized fibre boards; surface, troweled slate surface.

(C) DUROPLATE—Body, pure wood fibre board, thoroughly waterproofed; surface, troweled slate surface.

(D) PERMA KORKBORD MOUNTED—¼ in. cork cemented to 3-ply plywood. PERMA KORKBORD UNMOUNTED—cork with burlap backing.

(E) ROWLES METAL BLACKBOARD TRIM—Metal Trim, Metal Chalk Trough and Chalk Screen.

(F) ROWLES MAP and DISPLAY RAIL—For exhibits of various kinds.

Experience

The E. W. A. ROWLES Co., one of the largest manufacturers of blackboards in the United States, has been continuously in business under the same management for thirty-five years.

The unqualified guarantees covering the company's products are backed by an established financial integrity.

Facilities

Our factory, a model of efficiency, devotes approximately 30,000 sq. ft. of space to the manufacture of blackboards. Plant capacity is from 5000 to 8000 sq. ft. of finished blackboards per day. All products are manufactured under rigidly supervised, controlled processes. Uniformity of quality is positively guaranteed.

BLACKBOARD, METAL BLACKBOARD TRIM, CORK BULLETIN BOARDS

Enduraroc Blackboard

Enduraroc is composed of asbestos fibre, portland cement and carborundum, and other indestructible materials, combined by our own distinctive process and pressed into dense homogeneous slate colored panels. It has a wiry resiliency which resists breakage in handling and shipping. Its tensile strength, hardness and toughness increase with age. Surface is produced by our own distinctive process; it is smooth and of uniform color, free from defects, and with reasonable care will outlast the building.

Sizes—Enduraroc is carried in stock 3½ and 4 ft. wide in 5, 6, 7, and 8-ft. lengths. Thickness, ¼ in.

Color—Black.

Permaroc Blackboard

The lowest priced permanent blackboard obtainable. It is made of gypsum rock refined and toughened by special process and compressed between two layers of strong, protective fibre covering into ¼-in. slate colored panels. Thus returned to its original character, the gypsum panels are eternally strong, lasting, and slightly flexible. They provide an ideal base for our special durable writing surface. Permaroc is adapted for any climate or building.

Sizes—Permaroc is made in 3, 3½, and 4-ft. widths and in 5, 6, 7, and 8-ft. lengths—thickness ¼ in.

Duroplate Blackboard

Duroplate is a wood fibre blackboard built up layer upon layer of long, wiry wood fibre and pressed into dense ¼-in. panels, upon which a durable writing surface is applied. Duroplate is guaranteed for 10 years, but is built to last much longer. It is adapted for any building or climate.

Metal Blackboard Trim

The constant demand for greater economy and the increasing use of non-inflammable materials in schoolhouse construction have popularized Rowles Metal Blackboard Trim. It is easily erected, and much more durable than wood mouldings.

Rowles Metal Trim can be erected in much less time than wood trim. The mouldings and fittings are attached to wood grounds by small oval headed screws.

Unlike wood it does not warp or shrink. It is easily cut, fitted, assembled and erected by any competent carpenter or mechanic. The cost, erected and finished, is less than the cost of the average wood trim customarily used.

Perma Korkbord

Perma Korkbord Mounted—Mounted Perma Korkbord is made of pressed cork cemented to 3 ply wood panels. It measures, approximately, ½ in. thick; standard color tan. It may be had in any width and length up to 4 ft. wide and 8 ft. long. Weight, packed for shipment, 1½ lbs. per sq. ft.



Perma Korkbord Mounted

Perma Korkbord Unmounted—Unmounted Perma Korkbord is pressed cork with heavy burlap back. It measures, approximately, ¼ in. thick; standard color tan. It may be had in any width and length up to 6 ft. wide and 12 ft. long. Weight, packed for shipment, approximately 1 lb. per sq. ft.

BLACKBOARD SPECIFICATIONS

Include Under Lathing and Plastering

This contractor shall check all grounds for blackboards as specified in paragraph.....pages.....under division of "Carpentry Work." Thickness of grounds shall be such that plastering back of blackboards is flush with ground surfaces.

Plaster all spaces back of blackboards flush with grounds. Surfaces shall be in a true plane without projections beyond the face of ground work.

The finished coat of plaster may be omitted back of blackboards, but the brown coat shall be floated to a true plane in perfect alignment with the grounds.

Wherever blackboards are installed on outside walls which are not furred, the masonry back of plastering shall be given two good coats of dampproof paint.

Note: *The following clauses shall be included under the blackboard specification where and when they apply.*

(B1) Preliminary Work

General—Before the erection of blackboards, this contractor shall examine all preliminary work and shall report to the architect in writing any inaccuracies or variation from the specification requirements which will in any way deleteriously affect work under ths contract. Failure to so report defects, etc., if any, is construed as acceptance of the work as executed and release of those responsible.

(B2) Diagrams and Cutting Schedules

This contractor shall furnish to the architect, in triplicate, for his approval, cutting diagrams and cutting schedules showing disposition of joints and blackboard and tack or bulletin board sizes for the various rooms distinctly and accurately allocated.

(B3) Materials

Blackboards—Blackboards shall be ¼ in. thick [Enduraroc Blackboard] [Permaroc Blackboard] [Duroplate Blackboard] as manufactured by E. W. A. Rowles Co., Chicago, Illinois, or equivalent meeting fully this manufacturer's standards of quality as described in detail in their catalogue contained in the twenty-seventh edition of Sweet's Architectural Catalogues.

All blackboards shall have surfaces perfectly true and smooth, free of defects and from depressions or projecting particles.

Joint edges shall be sharp and make angles of 90 degrees with top or hanging edge. The bottom edge shall be parallel with the top edge.

Cement—Cement for spot cementing shall be Rowles Blackboard cement.

Note: *Omit if Permaroc or Duroplate is specified.*

Metal Blackboard Joints—Blackboard joints shall be made with Rowles Metal Joints, dull black finish.

All joint mouldings shall be without surface defects, smooth and straight.

Tack Board—All tack and bulletin boards shall be [mounted] [unmounted] Perma Korkbord.

(B4) Widths and Lengths

Widths—All blackboard widths (height from chalk rail to top) shall be as designated on the detail drawings and schedules.

Lengths—All sections up to 6, 7 or 8 ft. shall be in one piece; all sections over 8 ft. and up to 16 ft. shall be in two pieces; longer sections shall be in multiples of 6, 7 or 8 or fractions thereof, but arranged with joints symmetrically spaced and with no piece for filling out less than 3 ft. in its horizontal dimension. If Duroplate is specified spaces up to 12 ft. may be filled with one piece.

(B5) Storing

All blackboard material shall be properly stored at the building site in such manner as to adequately protect it from damage.

(B6) Uncrating and Distributing

All material which is to be set by the Carpentry Contractor shall be shipped in separate crates and delivered to him crated as received from the manufacturer.

All material to be erected by this contractor shall be uncrated in accordance with the manufacturer's directions. Distribute the material to the rooms and to the spaces in each room in their order, as indicated on the crates and sections to conform with the cutting diagrams and schedules.

(B7) Setting Blackboards

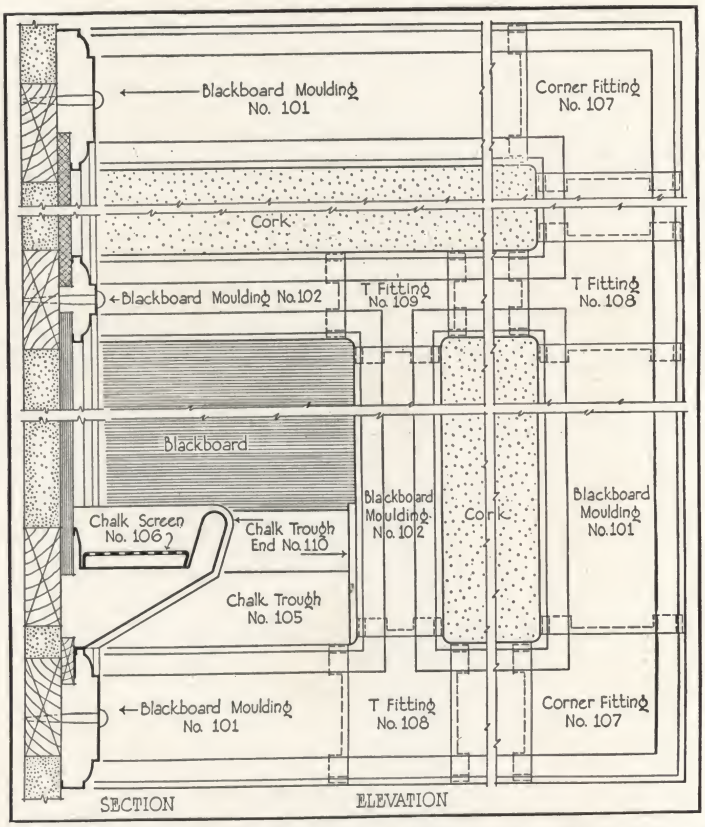
The setting, leveling and cutting of blackboard installations shall be in accordance with the manufacturer's recommendations and their standard specifications.

No blackboard shall be set until the final coat of finish has been applied and has dried on the blackboard woodwork trim (except loose tack mould).

All blackboards shall be set so that all edges shall be adequately covered by the loose tack mould. The writing surfaces shall be plumb and in a true plane with ¼-in. clearance on all sides.

Note: *Clearance is necessary to allow for swelling of wood trim.*

Where nailing is required to secure or hang the blackboard sections use 6d wire nails placed approximately ⅜ in. from the edge and not over 18 ins. on centers driven through drilled holes in board along the top and bottom edges.



Details of Rowles No. 101 Blackboard Moulding, No. 102 Blackboard Moulding and No. 105 Chalk Trough and Fittings

These mouldings are adapted for use with *Duroplate, Permaroc* and *Enduraroc, Natural Slate Blackboards,* also other types of manufactured blackboard

(B8) Blackboard Joints

All joints shall be made with Rowles Metal Joints. The moulding shall be the full width of the blackboard extending back of the tack mouldings which shall be neatly notched out over it at top and bottom. The moulding shall be shoved tight against the first board set and plumbed and toe nailed to grounds or furring; shove the next section of board into the groove of the moulding as far as possible and level and plumb the board.

Mouldings with surface imperfections or which are warped out of line shall not be used.

(B9) Final Cleaning

After the painter has applied the final coat of finish to the tack mould, this contractor shall do the final cleaning of all blackboard surfaces, charging the reasonable cost thereof to those responsible for any damage. All varnish spots or streaks shall be removed; apply Rowles Blackboard Surfacer rubbed down with fine pumice and water, blending the spots with the rest of the board surface.

SPECIFICATIONS METAL BLACKBOARD TRIM

Materials

Metal Blackboard Trim shall be manufactured by E. W. A. Rowles Co., 2500 Prairie Avenue, Chicago, Illinois, or equivalent meeting fully this manufacturer's standards of quality. All mouldings and fittings shall be delivered primed both sides for subsequent face finish after erection.

Mouldings and Fittings shall be:

No. 101 Outside Trim, No. 102 Divisional Mouldings and No. 105 Chalk Trough with No. 106 Chalk Screen together with the necessary flush aluminum fittings Nos. 107, 108, 109 as required for the particular blackboard design.

Cutting and Fitting

The metal trim shall be accurately cut with a hack saw to the various lengths detailed and assembled with the necessary fittings in accordance with the manufacturer's standard erection details. All joints shall be true and smooth. Drill all mouldings accurately for screw attachment spaced approximately 12 ins. on center, symmetrically placed.

Erection

Erect the blackboard trim over the blackboard. Mouldings and fittings shall be secured to wood grounds with oval headed screws. All trim shall be set level, plumb and true. All mouldings shall join fittings with close practically invisible joints.

Finishing

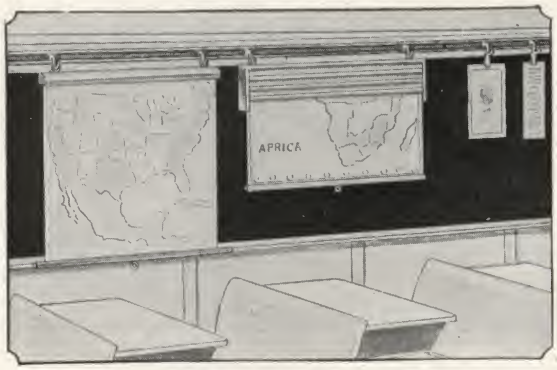
Finish all metal blackboard trim with [*1*] [*2*] coats of *(specify paint)* of color selected by the architect.

Note: *A standard metal trim enamel is advocated.*

Great care shall be exercised by this contractor that no painter's finish, by accident or otherwise, is applied to the blackboard surfaces. Any painter's finish appearing on blackboard surfaces will be removed and the surface refinished *(or new boards erected)* by the Blackboard Contractor at this contractor's expense.

ROWLES MAP AND DISPLAY RAIL

Rowles Display Rail is a simple, inexpensive, and exceedingly practical device for displaying bulletins, charts, maps, and exhibits of all kinds. It is indispensable in the schoolroom, office, and library. It affords neat display of visual aid material in the classroom and thus encourages the pupil to do better work.



Advantages

(1) Hooks can be inserted at any point. No shifting of display material is required to insert hooks at any point for additional display material.

(2) All hooks are cast brass. They have spring clips and are strong enough to support the heaviest map cases.

(3) Display channel or rail may be mortised or rabbetted in any position on the face of the trim, or may be screwed to the surface of the blackboard moulding, chair rail, or plastered wall.

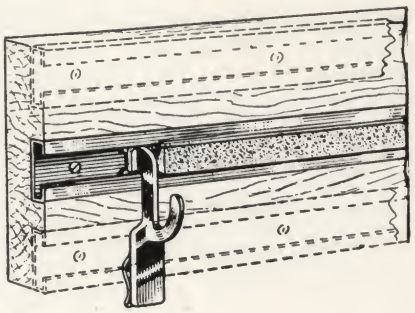
(4) Hooks slide freely without interference. They do not catch or bind and do not mar the finish on trim or exterior of rail.

(5) Rowles Display Rail may be equipped with cork insert and spring hook, if desired.

(6) Rowles Map Rail may be attached to any trim or moulding, either steel or wood. No special preparation of either wall or mouldings is required.

(7) Hooks are adapted to any width map and hold single map or complete set of maps weighing up to 150 lbs.

(8) Each hook has a projecting tab which protects moulding or wall. Where Rowles Display Rail is used the room always presents a neat and tidy appearance.



Description

Rowles Display Rail consists of a substantial steel channel section 1 in. wide, $\frac{3}{16}$ in. deep, in which the hooks and cork inserts slide. In schoolrooms the rail is screwed to the top blackboard moulding. In other rooms it is screwed at a convenient height to the trim, or directly to the wall. Screwholes are closely spaced insuring maximum strength. Hooks are made of cast brass, satin finish. Clips are spring steel. Rail is finished in brown.

Standard lengths are 3, 4, 6, and 8 ft. By placing lengths end to end a continuous rail may be formed to equip any size room.

WEBER COSTELLO COMPANY

CHICAGO HEIGHTS, ILL.

Over 55 Warehouses Strategically Located Throughout the United States and Canada

Products

STERLING LIFELONG BLACKBOARD.
OLD RELIABLE HYLOPLATE BLACKBOARD.
VELVASTONE BLACKBOARD.

WEBCO FOLDING LEAF BLACKBOARD.
WEBCO BULLETIN BOARD CORK.
WEBCO MAP and BULLETIN DISPLAY RAIL.

Sterling

Sterling is a laminated cement-asbestos blackboard with a velvet writing surface.

Advantages — (1) Uniform, permanent black writing surface that never fades or wears slick or glossy.

(2) Writing surface of even texture, sufficiently abrasive to make possible clear, distinct marks. The surface never cracks, checks or peels.

(3) It is economical, both in initial cost and in upkeep. It requires the minimum amount of crayon and never wears erasers excessively.

(4) The body or base is resilient and tough, insuring easy handling, without breakage. (Made by laminated process, especially for Sterling—pressed into dense panels by a tremendous hydraulic pressure.)

(5) Light in weight, minimizing freight costs and facilitating handling. (2.4 lbs. per sq. ft.)

(6) Made in large slabs—few joints required. (6, 7 and 8-ft. lengths and in 3½ and 4-ft. widths.)

(7) Easily and economically installed without expert labor.

Prices: 36¢ to 44¢ per sq. ft. f.o.b. factory, depending upon quantity. (Prices include enough cement for satisfactory installation.)

Velvastone

Velvastone combines economy with quality. The base or body is made of a specially constructed and processed Gypsum-Core Board, that is resilient and durable. The surface is the same as used on Old Reliable Hyloplate—recognized as the Standard for half a century.

Velvastone has an excellent writing surface—smooth and uniform, producing clear crayon marks that are easily read and easily erased.

The surface never reflects light—writing is always legible.

The rock-like core is encased in spruce pulp board, eliminating noise in writing on Velvastone.

Velvastone is economical on crayon and erasers. It is easy to install. (Just nail it to the wood grounds at top and place trim moulding around it.) Made in 3¼ and 4-ft. widths and 6, 7 and 8-ft. lengths.

An ideal blackboard for reduced budgets.

Prices: 21½¢ to 26¢ per sq. ft. at factory, depending upon quantity.

Metal Rustproof Joint—Holds two adjoining boards together in perfect alignment in the same plane. Is flat and neat in appearance and slated to match the blackboards. Labor and material considered, it is more economical than any other type of joint. It provides a perfect, permanent blackboard joint.

Hyloplate

Hyloplate's reputation for superiority is the result of its satisfactory performance over a period of half a century. It is used daily in some of the finest, most modern school plants in the country—always giving perfect service.

Hyloplate is made of live spruce wood pulp (laminated construction), with a Time-Tested writing surface that never cracks, checks or peels. Crayon marks are always easy to read on Hyloplate. No light reflection to injure pupils' eyes—noiseless—easy to write on—easy to erase—no breakage in transit or installation.

Hyloplate is constructed to give good daily service over a long period of time. It is guaranteed for ten years and invariably lasts much longer.

Hyloplate is light in weight (.83 lbs. per sq. ft.) and is easily and quickly installed without expert labor.

Made in long lengths, minimizing the number of joints. (6, 7, 8, 10 and 12-ft. lengths and 3½ and 4-ft. widths.)

Old Reliable Hyloplate's low initial and negligible upkeep cost commends it for modern school and industrial use.

Prices: 18¢ to 22¢ per sq. ft. at factory, depending upon quantity.

Webco Folding Leaf Blackboard

This is a new leaf-type of blackboard (Patent No. 1,881,636) for use in increasing available blackboard space or where wall space is limited. It consists of 4 leaves of Hyloplate (84 square feet) providing as much blackboard writing surface as is usually available in the entire classroom. The entire unit is movable and the individual leaves or panels may be removed. No special wall construction is necessary. Write for descriptions and illustrations.

Webco Bulletin Board Cork

Excellent quality. It is soft and springy, so that it remains "live" indefinitely and yet it is sufficiently firm to hold pins and tacks securely. The tacks are easily inserted and are held firmly in place. When removed, the holes close up. *W. C. Cork Tackboard* is ¼ in. thick with burlap backing, and is used on smooth walls that are flush with the blackboard grounds. *W. C. Corkboard* has the cork mounted onto a 4-ply wood fibre or compo-board backing and is used where wall is not smooth or the cork is to be installed directly on the studding or furring strips.

The Company

A company with nearly 50 years of blackboard building experience and ample resources. Warehouses and reliable representatives are located in every section of the United States and Canada and many foreign countries. Prompt service is assured.

Every product of WEBER COSTELLO COMPANY must perform to the complete satisfaction of the user. We recognize our responsibility to our customers and will investigate any complaint, should one arise, without expense or inconvenience to the customer.

(B) BLACKBOARD SPECIFICATIONS

Note: The following clauses shall be included under the blackboard specification where and when they apply.

(B1) Preliminary Work

Before erection of blackboards, this Contractor shall examine all preliminary work and shall report to Architect in writing any inaccuracies or variation from specification requirements which will in any way affect work under this contract. Failure to so report defects, etc., if any, is construed as acceptance of work as executed and release of those responsible.

(B2) Materials

(B2a) Blackboards—Blackboards shall be Sterling Lifelong Blackboards as manufactured by WEBER COSTELLO COMPANY, Chicago Heights, Illinois, or the equal as approved by the Architect and meeting this manufacturer's standard of quality. (Note: When specifying Velvastone or Old Reliable Hyloplate, use these names instead of Sterling and omit B2b).

All blackboards shall have surfaces perfectly true and uniform, free of defects and from depressions or projecting particles. Joint edges shall be sharp and make angles of 90 degrees with top or hanging edge. Bottom edge shall be parallel with the top edge.

(B2b) Cement—Cement for spot cementing the blackboard to the wall shall be W. C. Sterling Cement (No. 50).

(B2c) Metal Blackboard Joints—Blackboard joints shall be made with W. C. Metal Rustproof Joints slated finish. All joint mouldings shall be without surface defects, smooth and straight.

(B3) Sizes and Lengths

(B3a) Widths—All blackboard widths (height from chalk rail to top) shall be as designated on the detail drawings and schedules.

(B3b) Lengths—All sections up to 6 ft., 7 ft. or 8 ft. shall be in one piece; all sections over 8 ft. and up to 16 ft. shall be in two pieces; longer sections shall be in multiples of 6 ft., 7 ft. or 8 ft. or fractions thereof, but arranged with joints symmetrically spaced and with no piece for filling out less than 3 ft. in its horizontal dimensions.

(B4) Setting

(B4a) The setting, leveling and cutting of blackboard shall be in accordance with the manufacturer's recommendations and standard specifications, furnished with each shipment of blackboard.

Note: In the states of Texas, Louisiana, Mississippi, Alabama, Florida, Georgia, North Carolina and South Carolina, where the climate is hot and humid, blackboard will be almost certain to sweat unless installed by Weber Costello Company's *special patented Ventilated method of installation. Be sure to secure these directions. They must be followed to insure satisfactory results. Insert the following paragraph in specifications covering installations to be made in these states.)*

(B4aa) The setting, leveling, and cutting of blackboard shall be in accordance with the manufacturer's special patented Ventilated method, details of which will be supplied upon request.

(B4b) No blackboard shall be set until the final coat of finish has been applied and has dried on the blackboard woodwork trim (except loose tack mould).

(B4c) All blackboards shall be set by experienced mechanics so that all edges shall be adequately covered by the loose tack mould. The writing surfaces shall be plumb and in a true plane.

(B4d) Tack mould shall be carefully and accurately bradded in position by this Contractor with firm, continuous contact at all edges and brads neatly set for puttying.

(B5) Joints

Metal Joint Moulding—All joints shall be made with Sterling Metal Rustproof Joints. The joint shall be the full width of the blackboard extending back of the tack mouldings which shall be neatly notched out over it at top and bottom.

(B6) Final Cleaning

(B6a) After the painter has applied the final coat of finish to the tack mould, this Contractor shall do the final cleaning of all blackboard surfaces, charging the reasonable cost thereof to those responsible for any damage. All varnish spots or streaks shall be removed; apply W. C. Liquid Blackboard Surfacer rubbed down with fine pumice and water, blending the spots with the rest of the board surface.

(B7) Direction Plate

In each room fasten permanently where directed by the Architect, the metal plate, furnished by the blackboard manufacturer, bearing directions for breaking in and care of blackboard surface.

(B8) Breaking in Blackboard Surfaces

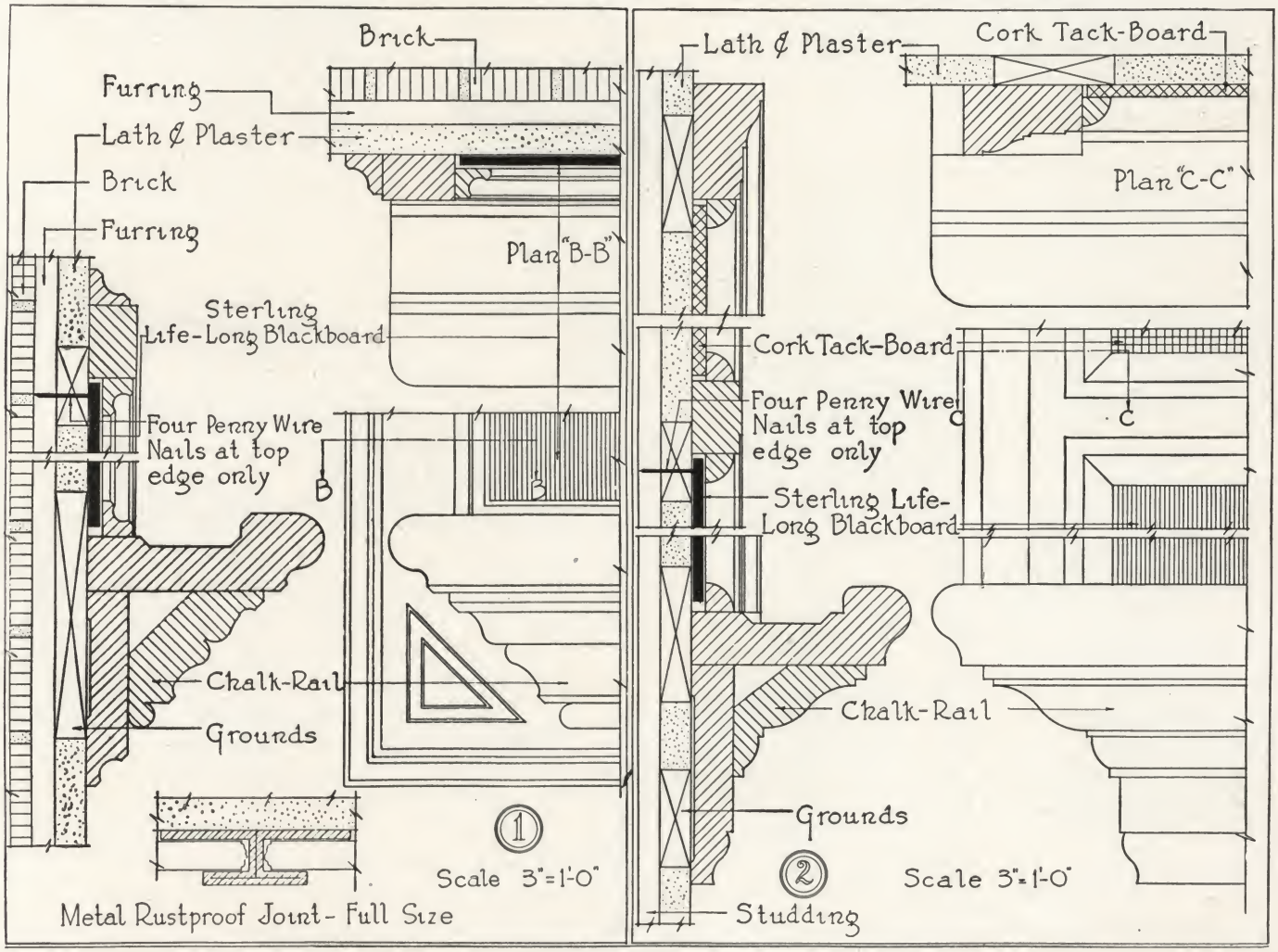
Note: Include where desirable. This Contractor shall break in all blackboard surfaces and leave in clean, perfect, ready-to-use condition as follows:

1—With the side of a piece of good quality crayon, chalk the entire surface of the blackboard. (Use only good grade crayon free from grease or grit. If the crayon is glazed or enameled it should be scraped off.)

2—Work the crayon into the surface slightly by erasing with a blackboard eraser. (No pressure is necessary.)

3—Erase with a clean eraser and follow with a soft cloth or a chamois skin.

The details below provide for installation in normally dry climate. In the following states—Texas, Louisiana, Mississippi, Alabama, Florida, Georgia, North Carolina and South Carolina—the climate is hot and humid and the manufacturers' special directions for patented Ventilated method of installation must be followed to prevent sweating and to insure satisfactory results. Write for information on these directions.



ARMSTRONG CORK & INSULATION COMPANY

CORK DIVISION

Member of The Producers' Council, Inc.

Manufacturers of Cork Bulletin and Tack Boards

926 Arch Street, LANCASTER, PA.

DISTRICT SALES OFFICES

ATLANTA, GA., 107 Cone Street
BOSTON, MASS., 286 Congress Street
CHICAGO, ILL., 111 North Canal Street
CINCINNATI, OHIO, 232 West Seventh Street
CLEVELAND, OHIO, 603-605 Hanna Building
DETROIT, MICH., 316 Garfield Building
NEW YORK, N. Y., 295 Fifth Avenue
PHILADELPHIA, PA., 408 North Third Street
PITTSBURGH, PA., 24th Street
ST. LOUIS, MO., 204 South Third Street
SAN FRANCISCO, CAL., 683 Bryant Street
MONTREAL, QUE., CAN., 1001 McGill Building
TORONTO, ONT., CAN., 522 King Street, West
WINNIPEG, MAN., CAN., 407 Confederation Life Building

Product

ARMSTRONG'S CORK BULLETIN and TACK BOARDS for schools, colleges, hotels, lodge rooms, offices, factories, etc.

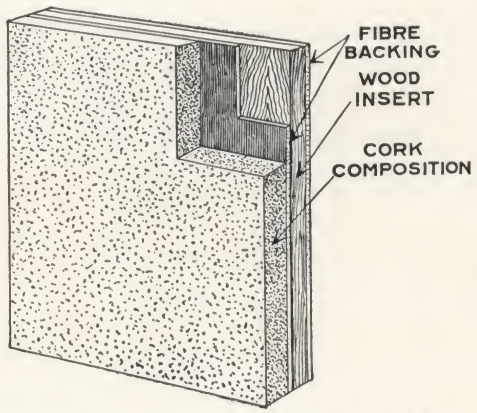
For Armstrong's Corkboard Insulation, Cork Pipe Covering, Corkoustic, Ceramacoustic, Temlok, Vibracork, Linoleum, Linotile, Rubber Tile, Accotile (asphalt type), Cork Tile, and Linowall, see Manufacturers' Index.

Description

Armstrong's Cork Bulletin and Tack Boards are of two types, wood-backed and burlap-backed. Wood-backed boards are composed of a layer of burlap-reinforced cork composition ¼-in. thick cemented securely to a backing of ¼-in. 3-ply wood insert compo board. Burlap-backed board differs from wood-backed in that it does not have the compo board reinforcing.

Particular Advantages of Armstrong's Boards

Because of the peculiar texture of the cork composition used in their construction, Armstrong's Bulletin and Tack Boards are far more satisfactory than wooden ones. Thumbtacks can be pushed easily into the cork. They are held securely and can be removed readily without the use of a tack puller or knife, and without damage to the finger nails. Furthermore, due to the resiliency of the cork, the tendency of the tack holes is to close up gradually. Hence, Armstrong's Cork Bulletin and Tack Boards are not marred by unsightly splinters and retain a much smoother surface than wooden ones. They can be cleaned easily with soap and water.



Sectional View, Armstrong's Wood-backed Cork Bulletin and Tack Board

Sizes

Standard panels of wood-backed board are 4x6 ft. x ½ in. thick. Boards or strips of smaller sizes can be easily sawed on the job from standard panels, or will be supplied by the factory. Larger sizes are furnished in sections.

Burlap-backed material is supplied in a single piece of any desired length and in any width up to 6 ft.

Colors

Both materials can be supplied in light brown, No. 30; dark brown No. 31; and green, No. 32.

Specifications

Wood-backed Cork Bulletin Board—Provide and install Armstrong's Wood-backed Cork Bulletin or Tack Board material as made by the ARMSTRONG CORK & INSULATION COMPANY, Cork Division, Lancaster, Pa. (This material is to be ½-in. thick, consisting of ¼-in. thick cork composition reinforced with burlap and cemented to a three-ply backing of compo board with wood core.)

All frames to be of same finish and material to match trim and to have loose cover mould as detailed around all cork bulletin boards. All cork bulletin boards to be securely nailed along all edges before placing cover mould in position.

Grounds—(Paragraph to be included under "Grounds" in Carpentry Specifications.)

Set a 2-in. x ⅞-in. thick (thickness will depend on adjoining trim, etc.) wood grounds to receive Armstrong's Cork Bulletin Boards when these are called for on drawings or specified. All grounds shall be set straight and leveled for all edges and in the middle, running the long way of each bulletin board, also where two sections of the bulletin board may join.

Burlap-backed Cork Tack Board—Provide and install Armstrong's Burlap-backed Cork Tack Board where indicated or herein specified.

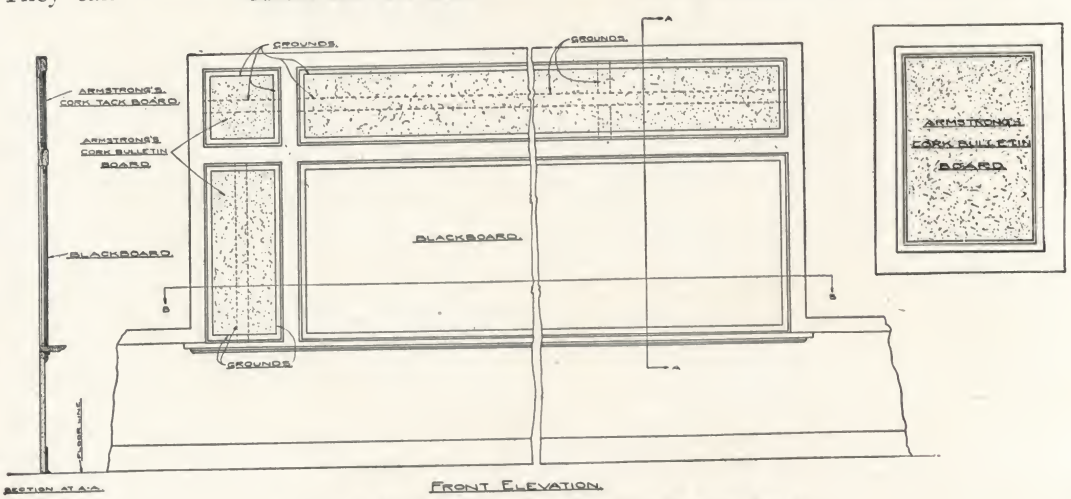
All tacking spaces shall be Armstrong's Burlap-backed Cork Tack Board as made by ARMSTRONG CORK & INSULATION COMPANY, Cork Division, Lancaster, Pa. (This material to be ¼-in. cork composition reinforced with burlap.)

All tack board is to be cemented to finished plaster with Armstrong's Waterproof cement as supplied by the ARMSTRONG CORK & INSULATION COMPANY, Cork Division, Lancaster, Pa.

All frames to have same finish and material as trim and to have loose cover mould as detailed.

Plastering—(Paragraph to be inserted in plastering specifications.)

Finished plaster to be carried over all areas detailed as cork tack boards.



Method of Installing Armstrong's Cork Bulletin Board

FRED MEDART MANUFACTURING CO.

Potomac and DeKalb Streets
ST. LOUIS, MO.

16 West 61st Street
NEW YORK, N. Y.

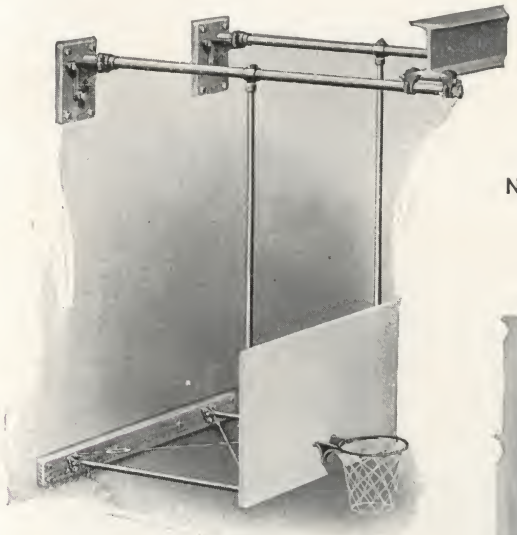
ENGINEERING AND SALES SERVICE IN PRINCIPAL CITIES

For Steel Lockers and Steel Wardrobes, see Manufacturers' Index

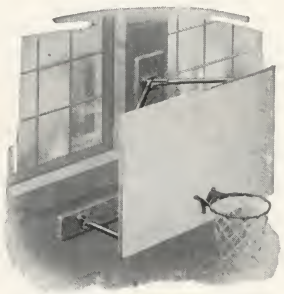
GYMNASIUM APPARATUS AND BASKET BALL BACKSTOPS

Basket Ball Backstop installations for new buildings require specialized engineering. Girder fittings, extensions, drops, guys, braces, and hoisting devices are planned according to individual structural conditions. Reinforced concrete beams and suspended plastered ceilings require advance planning of the correct type and number of pipe hanger girder fittings for both Backstops and Suspended Gym Apparatus. Such fittings should be specified in the general building contract so as to be in place before concrete is poured or ceilings closed in. A few standard Medart Backstops are shown on this page.

The Medart Engineering Department will completely plan Backstop installations for architects without cost or obligation. Send floor and elevation prints.



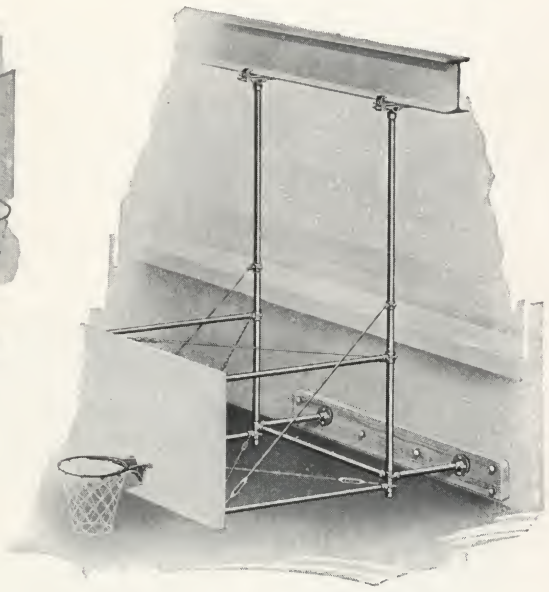
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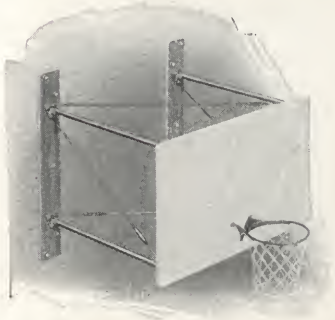
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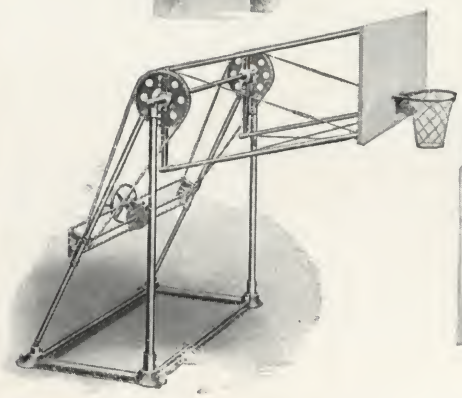
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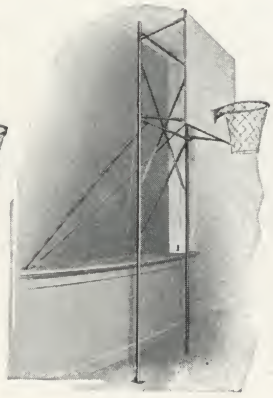
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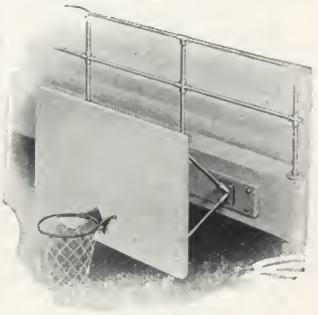
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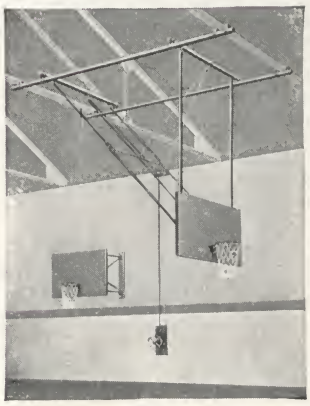
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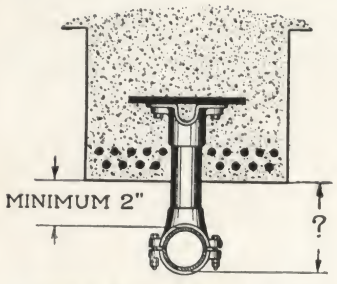
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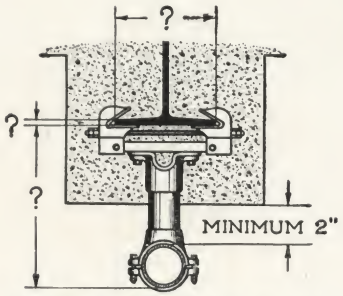
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No. 271



Concrete Beam Fitting No. 294



Enclosed I-Beam Fitting No. 325



No. 460

Catalogs

Catalog BB-1 is devoted entirely to Basket Ball Backstops; Catalog G-2 to Gymnasium Equipment including all suspended apparatus; Catalog L-3 to Steel Lockers, and Catalog LB-1 to Steel Wardrobes. Sent free on request.

SWIMMING POOL CONSTRUCTION CORPORATION

Swimming Pool Engineers, Builders and Consultants for More Than Twenty-five Years

TELEPHONE
VAnderbilt 3-8083

New York Central Building, 230 Park Avenue
NEW YORK, N. Y.

INDOOR AND OUTDOOR SWIMMING POOLS AND WADING POOLS
MODERNIZING OLD POOLS

Scope of Service

In addition to the *design, construction* and *equipment* of pools, our work includes any or all of the following items:

Reinforced concrete; waterproofing; drainage; inlets; outlets; overflow and floor drains; tiling; diving boards; pumps; filters; sterilizers; hair catchers; heaters; suction cleaners; underwater lights and all accessories.

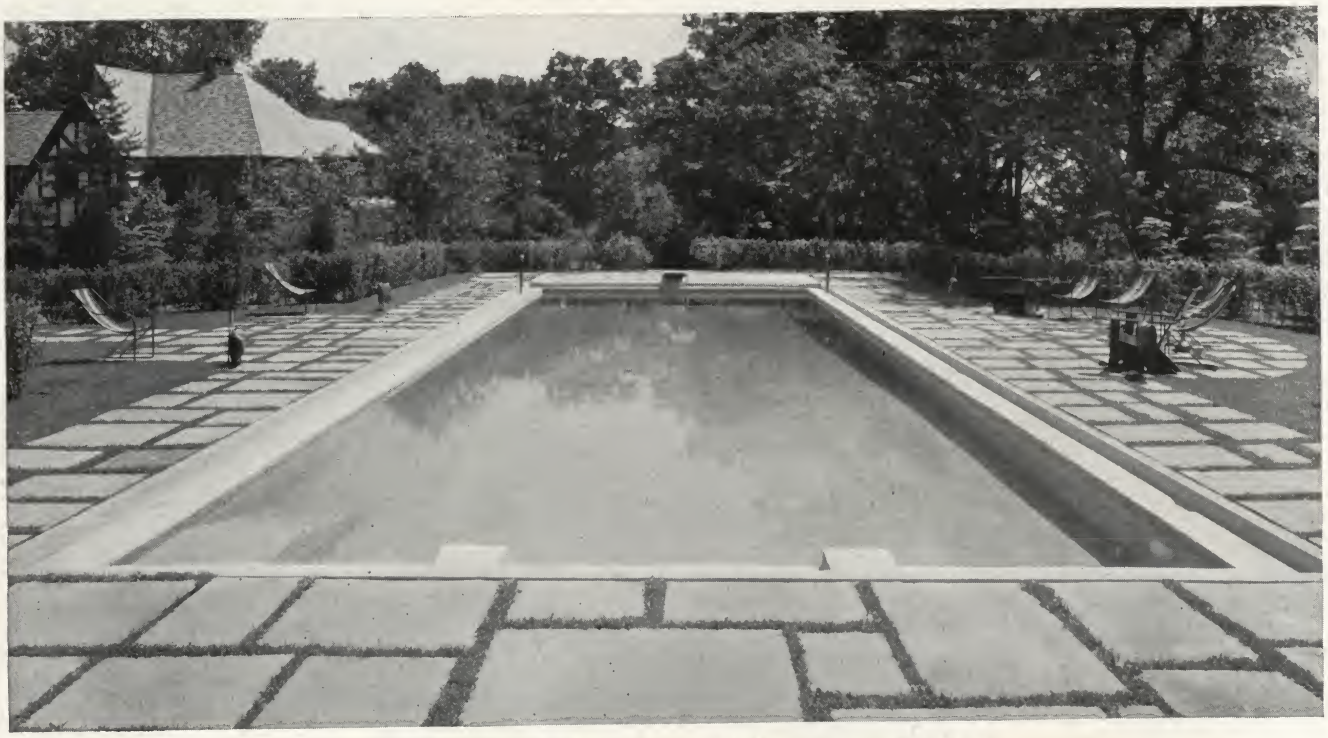
As Engineers—We furnish all necessary drawings; perform the engineering work, lay out all plumbing and mechanical equipment and write specifications for everything connected with the pool.

As Builders—We undertake contracts for swimming pool work *complete* or for any portion, such as reinforced concrete, waterproofing, tiling, mechanical equipment and accessories. If the contract is awarded to us, we make no charge for our engineering work. If the contract is awarded to others, we charge a nominal engineering service fee.

As Consultants—We are prepared to confer with architects and others regarding any swimming pool problem and to make recommendations based on many years of experience in this type of work.

Modernizing Old Swimming Pools—Old swimming pools can frequently be modernized at comparatively small expense. We will be glad to furnish estimates covering the work required to bring such pools up to the present day standards of beauty, convenience and sanitation.

Unit Contracts for Swimming Pools—To obtain the best results, the swimming pool should be treated *as a unit* when apportioning contracts. That is, the entire swimming pool work —reinforced concrete, waterproofing, tiling, mechanical equipment and accessories—*should be let as a single contract.* In this way, responsibility for successful results rests on *one* organization.



Swimming Pool on the Estate of Roessle McKinney, Loudonville, N. Y.

Designing the Modern Swimming Pool

The growth in popularity of swimming pools has been accompanied by a greater demand for convenience and for sanitary equipment. New systems of filtering, sterilizing, heating and re-circulating the water have been developed. The problem of sanitary maintenance has produced changes in pool design and more attention is being paid to decorative treatment of its surroundings. As a result, the work of planning, specifying and building an up-to-date pool has become increasingly complex.

It has been found that the best solution, from the architect's point of view, is to confer with an experienced firm of swimming pool engineers.

Tile Is the Accepted Material—Although we design and construct pools with every type of lining—including tile, faience, cement, enameled brick, etc.—we recommend tile.

Tile has unique advantages of sanitation, beauty, color, permanence and reasonable cost and has become the accepted material for lining the modern swimming pool. Tile is used for swimming lines, depth markers, gutter and curb; also, in many cases, for the walk and walls surrounding the pool. We are widely experienced in tiling work and can execute the most complicated shapes or patterns with complete satisfaction. We can help the architect by suggesting staple tiles which can be used for their decorative value without adding greatly to the cost of the pool.

Reinforced Concrete and Waterproofing—For best results, it is essential that the reinforced concrete be designed by an engineer experienced in swimming pool work.

As for waterproofing, consultation with swimming pool engineers is especially recommended as their intimate knowledge of the problem will prevent unnecessary expenditure during construction and obviate costly failures which inevitably follow faulty design or execution.

Water Supply—Only a limited amount of water is required for the upkeep of a modern swimming pool. The water is withdrawn, filtered, sterilized and returned to the pool by a continuous process of recirculation, only enough fresh water being added to make up for overflow losses. The entire contents of the pool is renovated one or more times daily; at intervals of several months the pool is drained and refilled. In some localities, the water supply must be specially treated to make it clear and attractive.

Outdoor Swimming Pools for Municipalities, Amusement Parks, Estates, Country Clubs, etc.

Special attention must be given to waterproofing of such pools. Drainage is also an important consideration. Concrete must be designed to resist frost and stress conditions.

For municipalities and amusement parks, pools are generally larger—lengths of 150 ft. and more are not exceptional. Circular and oval pools are popular. Plain concrete lining with tile gutters is generally used.

For estates and country clubs, rectangular pools are favored, with lining materials of cement, unglazed vitreous-body tile, ceramic mosaic and faience—all strictly frostproof.

Wading Pools

An interesting variation of the swimming pool is the tile wading pool for youngsters. Wading pools should slope to a maximum depth of 1 ft. 6 in. or less, and can be built at little expense. No elaborate plumbing is needed, thus they are suitable for the smallest grounds.

Glass Enclosures for Swimming Pools

A glass enclosure over the outdoor swimming pool is a source of considerable satisfaction and pleasure. The usefulness of the pool is extended and its healthful benefits may be enjoyed the year round regardless of the weather. We will be glad to recommend the type of glass house most suitable in each case and to submit estimates covering the installation.



Swimming Pool, Gymnasium Building, College of New Rochelle, New Rochelle, N. Y.
HENRY J. MCGILL, Architect

A Few Representative Swimming Pool Installations and Their Architects

Gymnasium Building, College of Mt. St. Vincent, Mt. St. Vincent-on-Hudson, N. Y.; *Paul C. Reilly,* New York, N. Y.
Gymnasium Building, College of the Sacred Heart, New York, N. Y.; *Maginnis & Walsh,* Boston, Mass.
Gymnasium Building, College of New Rochelle, New Rochelle, N. Y.; *Henry J. McGill,* New York, N. Y.
Hamilton Y. W. C. A., Hamilton, Ohio; *F. B. & A. Ware,* New York, N. Y.
Stamford Y. W. C. A., Stamford, Conn.; *F. B. & A. Ware,* New York, N. Y.
Colgate University, Hamilton, N. Y.; *F. B. & A. Ware,* New York, N. Y.
Estate of Walter C. Teagle, East Port Chester, Conn.; *Clinton & Russell,* New York, N. Y.
Williamsport Y. W. C. A., Williamsport, Pa.; *Lawrie & Green,* Harrisburg, Pa.
Indiana State Normal School, Indiana, Pa.; *Lawrie & Green,* Harrisburg, Pa.
Hazleton High School, Hazleton, Pa.; *Lawrie & Green,* Harrisburg, Pa.
Cortland Y. W. C. A., Cortland, N. Y.; *Carl W. Clark,* Cortland, N. Y.
Harbor Club, Seal Harbor, Me. (2 pools); *Duncan Candler,* New York, N. Y.
James Norman Hill Estate, Wheatley, N. Y.; *James Gamble Rogers,* New York, N. Y.
Grace Line Steamers (4)—"Santa Rosa," "Santa Paula," "Santa Lucia," "Santa Elena" (Gibbs & Cox, Engineers, New York, N. Y.)
Dollar Line Steamers (2)—"President Hoover" and "President Coolidge"; *Newport News Ship Building and Dry Dock Co.*
Alfred Corning Clark Memorial Building, Cooperstown, N. Y.; *Frank Whiting,* New York, N. Y.
Edward Severin Clark Estate, Cooperstown, N. Y.; *Harry St. Clair Zogbaum,* New York, N. Y.

HASBROUCK COMPANY, INC.

Swimming Pool Engineers
Consultants, Engineers and Builders
101 Park Avenue
NEW YORK, N. Y.

The Swimming Pool Problem

There are five major considerations in connection with a swimming pool:

(1) Design (2) Construction (3) Equipment (4) Maximum sanitation (5) Minimum maintenance

The first three must be exact in every detail in order to produce the last two which are of great importance to the health of those using the pool and to those operating the pool.

The arrangement of the showers and dressing rooms has a direct bearing upon the physical condition of the water in the pool. When we think of a pool it is most important to carefully plan for all showers and dressing rooms and locker rooms, which is part of the service rendered by us.

The A.A.U. and intercollegiate rules pertaining to swimming must be considered if the pool is to be usable for official meets, water polo or other aquatic sports.

The initial cost of a swimming pool is the first thought in the mind of the prospective owner, but relatively this is of less importance than that of sanitation and maintenance, which two latter items, after the completion of the pool, are constantly before the owners and become the major factors for the success or failure of the operation of the swimming pool. A sanitary pool means larger attendance, which in turn produces greater revenue and, if the maintenance cost is low, the net profits are naturally larger.

The above is made possible only through theory, research and experience. We have been for twenty years actively and exclusively engaged in swimming pool work and we are fully organized and equipped to serve as consultants, engineers and builders of swimming pools. We have our own specially trained men for this work. This places the responsibility under one head for the entire contract.

The swimming pool problem is not a simple one, but rather complex, with the following items to consider which must be properly correlated in order that the final result be successful and that the work may be guaranteed and bonded:

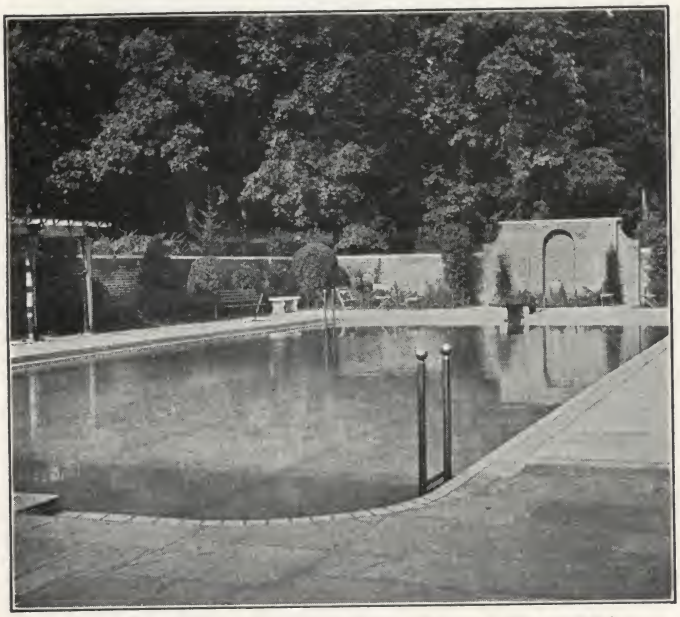
Sanitation	Reinforced concrete
Maintenance	Structural steel tanks
Filtration	Electric arc welding
Sterilization	Heating
Recirculation	Pumps
Ventilation	Motors
Condensation	Painting
Hydrostatic pressure	Special plumbing work
Waterproofing	Springboards
Tile work	Foot tubs
Ladders	Accessories

Architects are invited to consult with us relative to any type of swimming pool.

If we are awarded the contract to build a swimming pool we make no charge for services rendered. If we are not awarded the contract, we charge a fee for services rendered.

References

Recreation Centers, Washington, D. C., U. S. Government, Lieut. Col. U. S. Grant 3rd, Director
National Board Y. W. C. A., New York, Miss Lena Farrar
Architectural Bureau Y. M. C. A., New York, N. McMillan
Jewish Welfare Y. M. H. A., New York, L. Kraft
American Red Cross, Washington, D. C., H. F. Enloss
Playground Recreation Association, New York, Geo. Butler
Board of Education, Lakewood, Ohio, G. W. Grill
McKim, Mead & White, Architects
Walker & Gillette, Architects
Waddy B. Wood, Architect
Shepard & Stearns, Architects
Bradley Delehanty, Architect
Goodwin, Thompson & Patterson, Architects
John Russell Pope, Architect
York & Sawyer, Architects



Pool, Columbia Country Club, Chevy Chase, Md.
ARTHUR B. HEATON, Architect, Washington, D. C.



Men's Pool, Penn A. C., Philadelphia, Pa.
ZANTZINGER, BORIE & MEDARY, Architects

WM. H. JACKSON COMPANY

ESTABLISHED 1827

2 West 47th Street
NEW YORK, N. Y.

318 No. Michigan Avenue
CHICAGO, ILL.

For Jackson's Ornamental Bronze and Iron Work and Bronze or Aluminum Windows, see Manufacturers' Index

TILE LINED SWIMMING POOLS

We have co-operated with architects and owners on more than 300 pools throughout the United States, Canada, Cuba and Puerto Rico.
Our Designing Department and technical experience is always at your service.

Jackson Pools

Among the special features of our tile pools, developed through many years of experience and which contribute to the safety and enjoyment of their owners are: proper waterproofing, the Jackson Life Rail, grip, coping, overflow trough, depth and distance numerals and safety guides. Also metal strainers, inlet, outlet and floor drains of special patterns, and diving boards.



General Tile Work

Numberless possibilities in the use of tile for achieving beautiful treatments at low cost can be suggested by our designing department, and we are always glad to co-operate in the presentation of sketches or finished drawings, while our technical staff is ready to solve your tile problems. A permanent organization, expert in every branch of tile, is at your service.



Swimming Pool on S. S. Manhattan—America's Newest and Fastest Liner

Designed by Walter M. Ballard Co. Built by New York Ship Building Co.

AMERICAN PLAYGROUND DEVICE CO.

Swimming Pool Equipment

ANDERSON, IND.

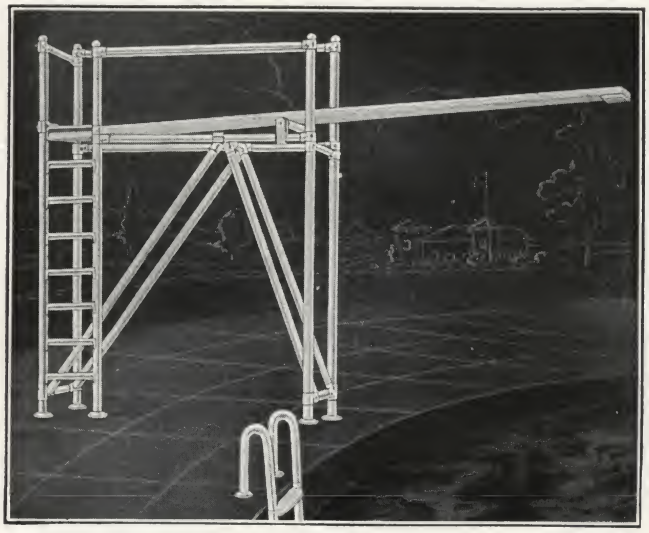
Products

SWIMMING POOL EQUIPMENT.

Also Water Sport Devices; Playground Apparatus; Flood Lights; Foot Bath and Chemical Treatment for athlete's foot; Playing Equipment and Complete Information for Shuffle Board—the old "Steamship Game Come to Land."

Official Regulation Springboards

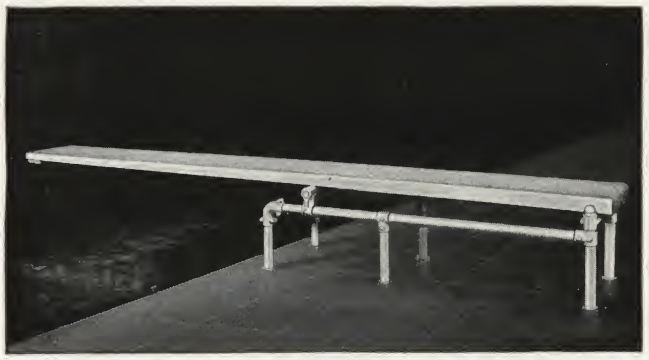
Boards conform to specifications of the N.C.A.A. and A.A.U. of the U.S.A. All frame fittings are *certified malleable iron,* hot-galvanized, of the clamp and bolted type. *No threads* on pipe or fittings. Special concrete inserts with brass locking-lug, making the entire frame removable.



Regulation Three-metre Springboard—No. DB-1016—Complete outfit as illustrated; board has cocoa-mat top covering 18 ins. wide. Weight, 900 lbs.

As diving end of board must be 10 ft. above the water, it is necessary for factory to know the distance from water to level of pool concourse, so pipe legs of proper length will be furnished. It is advisable to send us blue print showing construction of pool wall—sometimes there is a parapet in which it is desired to set the front pipe legs.

The ladder can be installed on either side of tower; the side location is usually preferred, thus leaving clear passage at rear of tower.



Regulation One-metre Springboard—No. DB-214—Complete outfit as illustrated; board has cocoa-mat top covering 18 ins. wide. Weight, 550 lbs.

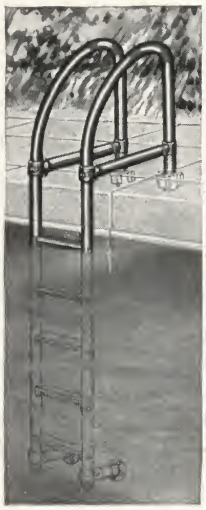
Diving end of board must be 39 ins. above water level. Same information required as requested for DB-1016.

"American" Springboard

This board is sectional construction (stronger than a single piece of lumber); 18 ins. wide and 12 ft. long; highest grade white oak; the main member 1¾ in. thick at diving end, and reinforced underneath by a 1½-in. board.

A board giving exceptionally long life; suitable for any pool where the official regulation board is not considered necessary. Hundreds in use at municipal and commercial pools.

No. DB-1218—Complete with anchors and inserts; board has cocoa-mat top covering 18 ins. wide.



Vertical Pool Ladders

Risers and cross-braces 1⅞-in. outside diameter tubular construction, hot-galvanized. Furnished in any length desired. However, a ladder for pool depth of 6 ft. is considered the maximum necessary, as swimmers approach the ladder near the surface.

Over-all width, 21 ins.; distance between risers, 17 ins.; bottom tread approximately one foot from pool bottom. Treads of non-slip wood or metal, as preferred.

Special inserts with lock-plates hold the ladder securely in the pool walk, and make unnecessary any anchors in the sidewall; our special fittings offer a good bearing against wall.



Life Guard Chair

Standard 1½-in. inside diameter, hot-galvanized steel pipe, fabricated with malleable clamp fittings of the through-bolt type. *No threads* on pipe or fittings.

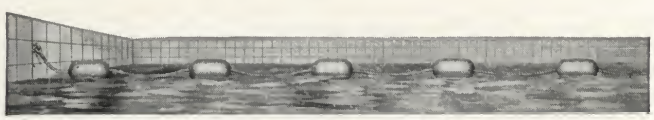
Height: over all, 90 ins.; to seat-board, 72 ins.; to foot rest, 54 ins.

No. LGC-1 chair complete as illustrated; includes two cork ring life-buoys 21-in. diameter with 20-ft. rope attached; and umbrella having 5½-ft. spread with tilting attachment on handle.

Furnished with lock-type concrete inserts, as illustrated, or with threaded flanges for lag-screwing on wood platform or shell-bolting to existing concrete walk.

Pool Life Lines

No. LL-21—Waterproofed highest grade manila rope with cork floats 6-in. diameter and 12 ins. long, spaced 5 ft. apart. Special anchor for setting in wall of new pool.



Complete Catalogue

Illustrates a complete line of American equipment for pools, and special water sport devices. Separate catalogue covering outdoor playground apparatus and flood lighting units. Send for them.

Blueprints furnished on request.

ESTABLISHED 1900

HILL-STANDARD CO.

Specialists in Swimming Pool and Bathing Beach Sports Apparatus and One of the Largest Manufacturers of Outdoor Recreation Equipment

ANDERSON, IND.

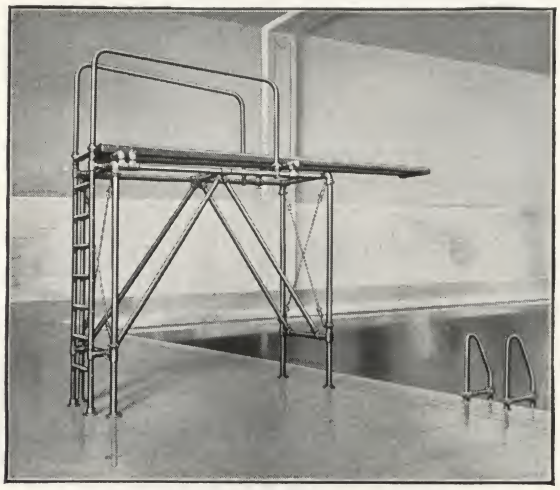
International Regulation Springboards

Built in compliance with specifications of the National Collegiate Athletic Association and Amateur Athletic Union of the United States. Boards are of carefully selected, vertical straight grain Oregon pine of one piece, thoroughly seasoned and treated. Fittings are best quality galvanized malleable iron, except lower base flanges, which are brass and set flush in walk. Boards fitted with adjustable, rubber covered fulcrum. Designed so the complete apparatus may be readily moved, as the upper flanges are attached to lower floor flanges by cap screws. Springboard stands can be furnished in polished brass, brass chromium plated and galvanized steel chromium plated, thus making it possible to match the pool ladders with the springboard equipment. *For either indoor or outdoor pools.*

One of the best the market affords.

National Regulation High Springboards Nos. 1528, 1529 and 1530

In order that this board may be correctly installed, the tip of board must be exactly 10 ft. from water level, and as pools are not uniformly built, we must know the distance from the pool walk down to waterline. Vertical ladder is of improved type, using galvanized malleable iron step brackets, upon which are mounted non-slip flat metal safety treads.



Nos. 1528 and 1529 High Springboard (Olympic)

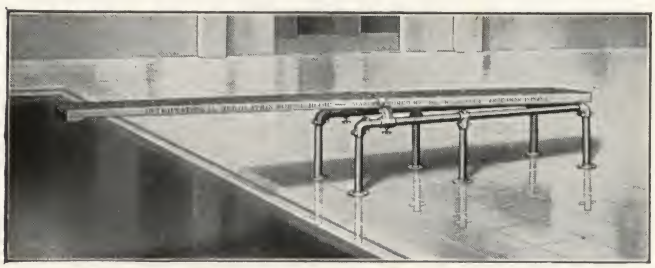
No. 1528—Springboard complete with stand, anchors and all fittings. Board entirely covered with 36-in. safety cocoa matting. Weight about 1000 lb.

No. 1529—Springboard complete with stand, anchors and all fittings. Board furnished with 18-in. strip cocoa matting. Weight about 1000 lb.

No. 1530—Board only, for replacement purposes (matting or fittings not included). Weight about 280 lb.

International Regulation Low Springboards Nos. 1525, 1526 and 1527

To be installed as ruled, tip of board to water level must measure 39 in. It is therefore necessary that we have the measurement from walk level to water line.



Nos. 1525 and 1526 Low Springboard (Olympic)

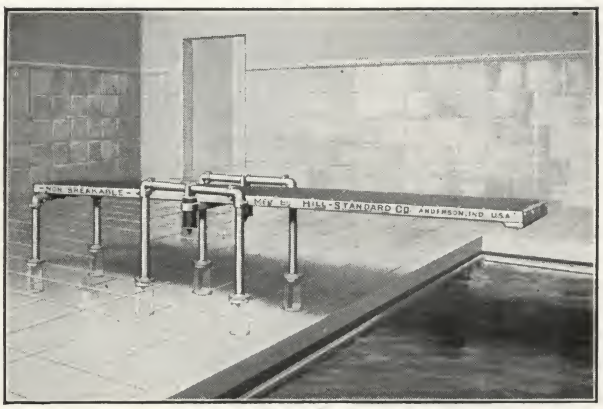
No. 1525—Springboard complete with stand, anchors and all fittings. Board entirely covered with 36-in. safety cocoa matting. Weight about 540 lb.

No. 1526—Springboard complete with stand, anchors and all fittings. Board furnished with 18-in. strip cocoa matting. Weight about 535 lb.

No. 1527—Board only for replacement purposes (matting or fittings not included.) Weight about 275 lb.

Non-breakable Springboards Nos. 1535, 1537

Here is presented the non-breakable springboard. It is of regulation size (i.e. 20 in. x 14 ft.) and otherwise closely resembles the one meter international regulation board. Fitted



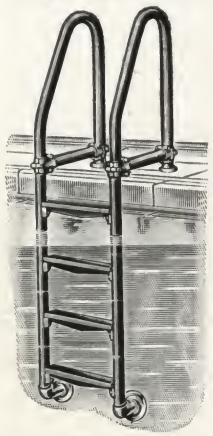
with specially designed adjustable fulcrum and flush type anchors that permit quick removal of entire apparatus. All metal fittings hot galvanized. Board cut tapering, measuring 3 in. at butt and 1½ in. at tip. No holes in springboard at fulcrum point; thus insuring longer life and better action. Shown for concrete or tile installation; made also for planked flooring.

No. 1535—Complete (as shown) with 18-in. matting. Weight about 425 lb.

No. 1537—Complete with 36-in. matting, otherwise as shown. Weight about 430 lb.

Removable Vertical Pool Ladder

Furnished with tubular risers of either 1½-in. i. d. (1$\frac{15}{16}$-in. o. d.) or 2-in. i. d. (2⅜-in. o. d.). The smaller size is generally used for private pools, the larger by public indoor and outdoor pools.



Both are of same step spacing and width (20 in. center to center of risers); furnished regularly in lengths 3 and 5 ft., measured from walk level to bottom of ladder. Provided with non-slip flat metal safety treads measuring 3x18x⅞ in. thick. Metal treads are not only a safety measure—they present a neat appearance, are comfortable, sanitary, safe and economical.

Anchored only in pool walk, 18 in. from edge; enables lifting of ladders without leaving walk; eliminates breaks in pool wall. Exclusive one-piece dual anchor embedded flush with walk eliminates contraction and expansion strain. Ladder measures 22⅞ in., extreme width, and clears wall 4 in. Handrails 37 in. high and rest 6 in. in anchor sockets. Furnished in polished brass, brass chromium plated and polished, and galvanized steel chromium plated. Approved by leading pool architects and engineers.

No. 1711—3-ft. hot galvanized steel and malleable iron, metal treads. Weight about 163 lb.

No. 1713—5-ft. hot galvanized steel and malleable iron, metal treads. Weight about 178 lbs.

Special Water Goods Catalog No. 9

Send for this beautiful illustrated catalog and prices.

Also manufacturers' playground and outdoor floodlighting equipment.

WESTINGHOUSE ELECTRIC & MFG. CO.

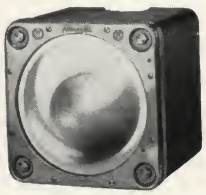
EAST PITTSBURGH, PA.

For Branch Offices, see our Lighting Catalogue
For References to Other Products, see Index to Manufacturers

UNDERWATER FLOODLIGHTS

Application

There are three types of Aqualux Floodlights—the smaller Type W and the larger Types CF and CS. Type W, with a 250-watt lamp is used for underwater lighting of swimming pools, fountains, and waterfalls which are less than 75 ft. wide. Larger bodies of water require the Types CF and CS units of 500, 1000 or 1500-watt sizes. Type CS unit is used with a receptacle in a swimming pool or similar applications. Type CF is used in fountains or similar places mounted rigid whenever the fountain can be drained to permit relamping.



Type W Aqualux Underwater Light

Construction

Casing—Type W, non-corrosive aluminum or bronze; Type CF, non-corrosive cast silicon aluminum alloy; Type CS, non-corrosive bronze.

Door—Cast silicon aluminum or cast bronze, bolted against a rubber gasket.

Lens—Heat-resisting glass; convex clear, diffusing, rectilinear spread, or rectilinear tilted spread lens.

Reflector—Non-tarnishing chromium-plated metal.

Mounting—Type W unit has an aluminum tray for 1¼-in. pipe mounting in upright position in fountains, and a bronze recess box and positioning studs for mounting in swimming pool wall. Type CF unit has a base for mounting on 1½-in. pipe so that it can be adjusted through 30 degrees in any direction for fountains. A bronze recess box or receptacle for mounting in a swimming pool wall can be supplied for use with Type CS.

Color Screens—Of heat-resisting glass and are available for mounting in the door of Type W unit and outside the door of Types CF and CS.

Wiring—15 ft. of two-conductor rubber covered cable is brought through a watertight packing gland from Types W and CS to facilitate lifting the units to the surface. Type CF is arranged for conduit wiring or a packing gland. Glands and cable can be supplied on request.

Lamps—Westinghouse recommends for Type W Aqualux unit, the use of 250-watt, 115-volt, G-30 floodlight lamp; for Types CF and CS Aqualux units, the use of 500-watt, 115-volt, G-40 floodlight lamp, or 1000-watt, 115-volt, G-40 floodlight lamp (special), or 1500-watt, 115-volt, G-48 floodlight lamp (special).

Caution—Aqualux units should not be operated unless completely submerged in water. Aluminum units should not be used in salt water or heavily chlorinated water.

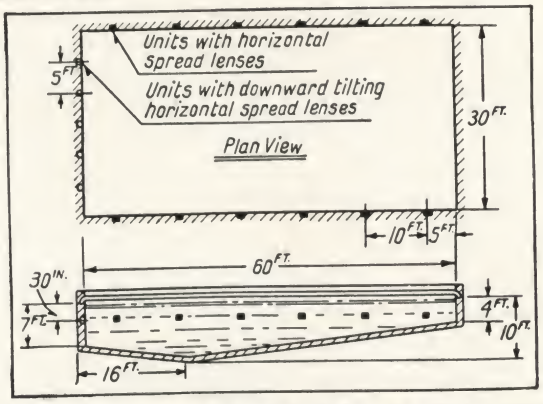


Diagram of a Typical Installation of Underwater Pool Lighting with 250-watt Aqualux Units

Designing a Swimming Pool Lighting Installation Using the Westinghouse Aqualux Underwater Light

Good pool lighting practice requires two lamp watts per square foot of water surface. To provide uniform illumination on sides of pool and on objects in the water, a spacing distance of 10 ft. is considered maximum. Two rows of units are recommended for use in water 10 ft. or more deep.

Problem—To illuminate an indoor swimming pool 40x70 ft. in which depth of water varies from 3 to 10 ft. use the following formula:

$$\frac{\text{area x watts per sq. ft. (2)}}{\text{lamp size (250 watts)}} = \text{Number of underwater lights required}$$

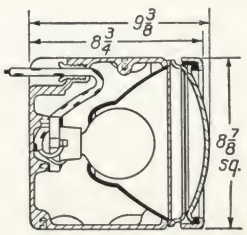
or

$$\frac{40\text{x}70\text{x}2}{250} = \frac{5600}{250} = 22.4 \text{ or } 22 \text{ underwater lights required.}$$

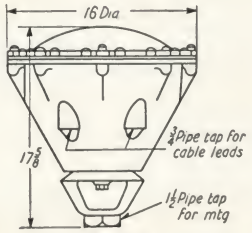
Since a spacing of 10 ft. may be used units should be arranged 7 on each side spaced 10 ft. apart and 5 ft. from each end. They should be mounted so that center of lens is approximately 12 to 18 in. below surface of the water.

At the deep end of the pool, 3 units should be spaced 10 ft. apart and 10 ft. from each side. Another row of 5 lights spaced 8 ft. apart and 4 ft. from each end should be mounted 18 in. above the bottom of the pool.

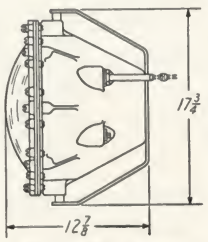
The underwater light should be mounted in a recess so that the door of the unit is flush with the side of the pool.



Type W Aqualux



Type CF Aqualux



Type CS Aqualux

Description	Shipping weight, lbs.	Style No. Aluminum	Style No. Bronze
Type W Aqualux			
Projector with clear lens	40	347775	348675
Projector with rectilinear spread lens	40	347776	348676
Projector with circular spread lens	40	347777	348677
Projector with rectilinear tilting spread lens	40	347778	348678
Projector with plain red lens	40	347779	348679
Projector with plain amber lens	40	347780	348680
Projector with plain green lens	40	347781	348681
Projector with plain blue lens	40	347782	348682
Projector with rectilinear spread red lens	40	347783	348683
Projector with rectilinear spread amber lens	40	347784	348684
Projector with rectilinear spread green lens	40	347785	348685
Projector with rectilinear spread blue lens	40	347786	348686
Projector with circular spread amber lens	40	347787	348687
Type CF Aqualux			
Projector with clear lens for 1½-in. pipe mounting (aluminum)	60	340649	.....
Projector with rectilinear spread lens for 1½-in. pipe mounting (aluminum)	60	340660	.....
Projector with diffusing lens for 1½-in. pipe mounting (aluminum)	60	340661	.....
Type CS Aqualux			
Projector with clear lens for receptacle mounting (bronze)	60	.....	342900
Projector with rectilinear spread lens for receptacle mounting (bronze)	60	.....	342901
Projector with diffusing lens for receptacle mounting (bronze)	60	.....	342902

EVERSON FILTER CO.

Manufacturers and Builders of Swimming Pools

LONG DISTANCE TELEPHONE
Chicago, Haymarket 7005

625 West Lake Street
CHICAGO, U. S. A.

Products

WATER RECIRCULATING, FILTERING and STERILIZING SYSTEMS for swimming pools; ELECTRIC CHLORINATORS; STERILIZERS; CHLORINATORS; UNDERWATER LIGHTS; AUTOMATICALLY CONTROLLED WATER SOFTENERS for swimming pools; SUCTION POOL CLEANER, built-in and portable; CORAMETAL (non-tarnishing) POOL FITTINGS; COMPLETE SWIMMING POOLS, design and construction; POOL EQUIPMENT; FOOT STERILIZERS; PORTABLE FOOT BATHS.

Also Filters for all purposes; Water Softeners; Water Coolers.

Swimming Pool Experience

For over 25 years, leaders in swimming pool development and construction. Creators of the Everson Recirculating System which fulfills all requirements of all National, State and municipal boards of health and assures clear water of drinking purity at all times. Our staff is made up of a co-ordinated group of experts, each a specialist in his phase of swimming pool design, construction and sanitation.

Equipment for Pools

The Everson Filtering-Clarifying-Purifying System removes all sediment, keeps water germ-free, crystal-clear and pure. The Everson System is sold complete and installed (as shown above) or the following units can be bought separately:

Filters	Underwater Lights
Sterilizers	Hair and Lint Catchers
Pumps and Motors	Inlet fittings
Heaters	Main drain fittings
Vacuum Cleaners	Gutter drain fittings
Ozonators	Floor drain fittings
Chlorinators	Aerating Nozzles
Coagulators	Automatic Water Softeners
Foot Baths	Portable Foot Sterilizers

New Developments and Free Bulletins

The Everson Laboratories and engineers are constantly working out new and better methods and equipment for building and operating swimming pools. The Everson Electric Chlorinator and Everson Underwater Lights are typical Everson products. For twenty-five years Everson has been a leader in the development of equipment and is farther in advance today than ever.



This rectangular style of fitting has largely replaced the round grating types. It offers greater beauty, greater usability and large capacity in confined spaces

To acquaint architects and pool builders with this new equipment as it is perfected, numerous informative bulletins are issued from time to time. These bulletins are sent free, upon request. That you may keep up-to-the-minute on swimming pool equipment, write and have your name put on the mailing list to receive them as issued—no obligation whatever.

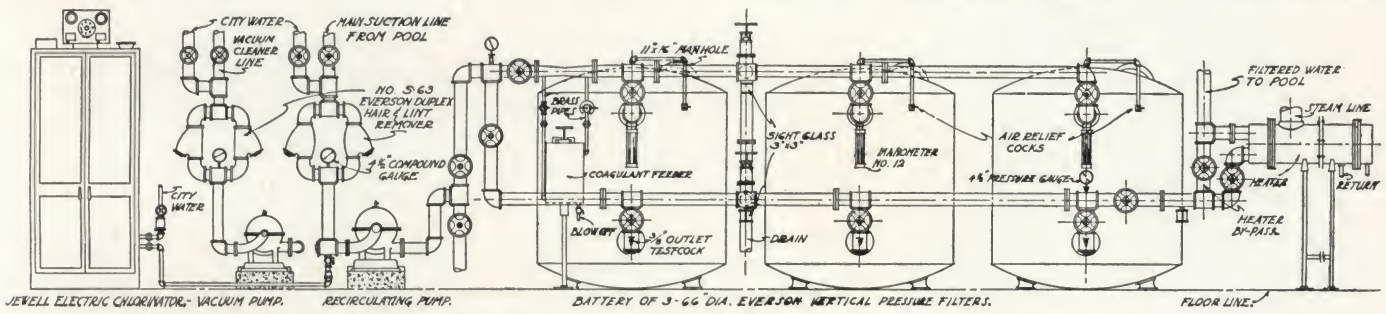
Service to Architects

Advisory and consulting service given to architects without charge or obligation. Detailed information, drawings, specifications and estimates are gladly furnished for complete pools or any part thereof. Feel free to use this service on any contemplated job. Just send us: (1) the capacity of the pool, in gallons, (2) the rate of turnover desired, and (3) space limitations. We will promptly work out and send you: drawings, detailed specifications and cost information for a Recirculating, Filtering, Sterilizing *Equipment that will* fulfill the most rigid requirements. This service is absolutely free to licensed architects and engineers. It obligates you in no way.

Everson Recirculating System

The water of the pool is continuously being purified by this system. It is always germ-free and crystal-clear. With this system it is not necessary to shut down the pool every few days for cleaning and replenishing with heated water. This saving alone often pays the cost of the Everson System within a period of one year. The operation of this system is as follows:

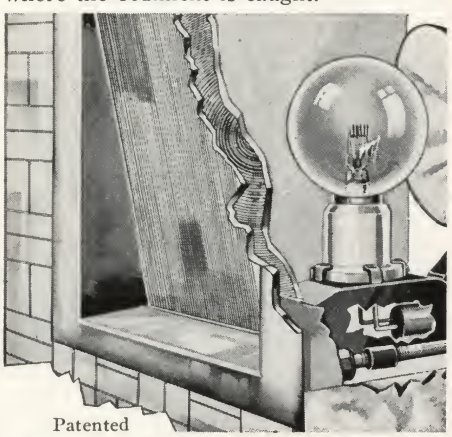
Motor driven pumps draw the water from the pool through the "Outlet Fittings" and "Strainer." At this point the sterilizing solution is fed into the line. The pump then forces the sterile water through the "Filters" and "Heater" and back into the pool through the "Inlet Fittings." This method keeps the filter beds always in a sterile condition, preventing bacterial growth in the filters where the sediment is caught.



Everson Filtering and Sterilizing System for a 100,000-gal. Pool

Everson Improved Underwater Lights

They furnish a veritable flood of evenly diffused light, a glowing mass, through which swimmers glide, fully visible at all depths. They can be installed in any indoor or outdoor pool. These improved underwater lights are of non-corrosive construction and the glass is securely fastened to prevent leakage.



Patented

Phantom View of Everson Underwater Light, Installed

MARSH ELECTRO CHLORINATION COMPANY, INC.

TELEPHONE
AShland 4-5777

101 Park Avenue, NEW YORK, N. Y.

PERFECT SANITATION OF SWIMMING POOLS

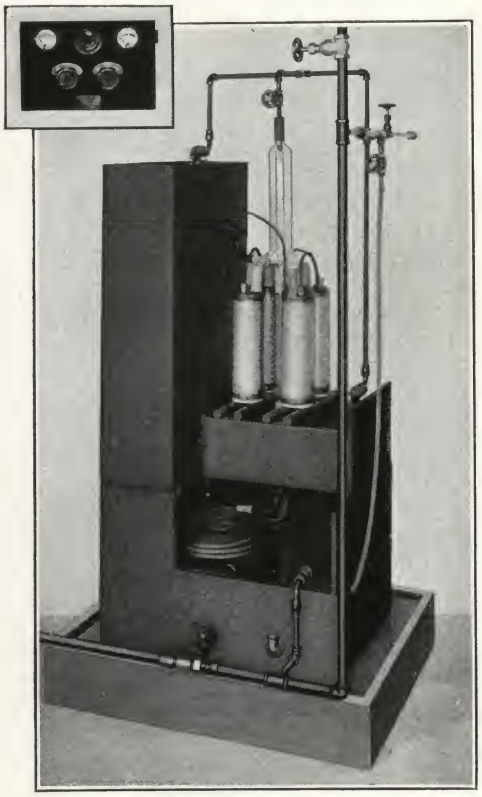
Neutral Disinfection with the Marsh System of Electro Chlorination

The Marsh System provides the safest, most effective and most desirable form of chlorination. It produces a powerful yet neutral (non-irritant) oxidizing solution, sodium hypochlorite, a product similar to Dakin's solution, and delivers it to the water in accurately controlled doses.

WATER AND AIR SAFETY — MARSH ELECTRO CHLORINATOR — PURIFICATION NON-IRRITANT
MARSH SYSTEM
PERFECT SANITATION SWIMMING POOLS
MARSH ELECTRO CHLORINATION COMPANY, Inc.
NEW YORK CITY

Wide Scope of Installations

The Marsh Electro Chlorinator has been installed over a period of years in every type, size and kind of swimming pool for universities, hotels, hospitals and clubs, and in private pools. Each year finds a larger number installed than the year before. More and more architects and engineers recognize that here is a quality equipment offering the most desirable features of a sterilizing apparatus and yet successfully surmounting disadvantages that have become accepted simply because no one had been able to overcome them.



Hard Rubber Type

Important Advantages

Provides complete and uniform sterilization in every part of pool.

Control is accurate, dependable and convenient because it is operated by electricity.

Operates on alternating or direct current.

No commodity to buy but salt.

Simple and easy to install.

Eliminates extra cost for protection in handling and storing hazardous chemicals.

Filtration is improved.

Eliminates outlay for expensive prepared solutions.

Inexpensive to operate.

No irritating and unpleasant conditions in the water.

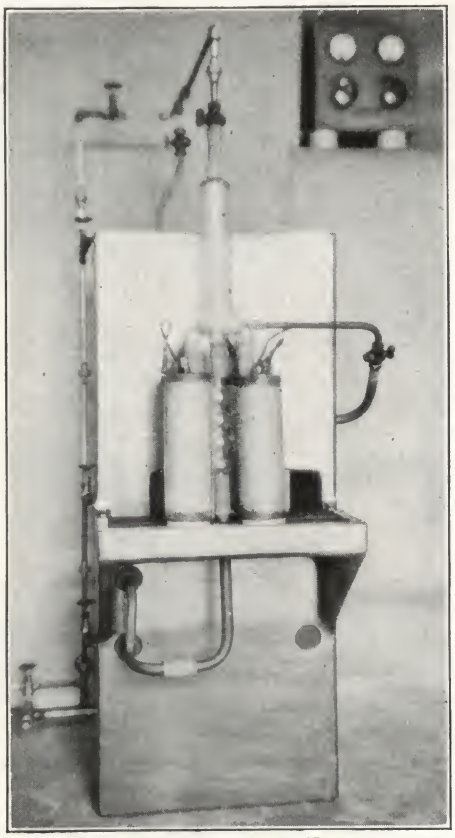
Has long life because all parts are non-corrodible.

Apparatus is kept new and accurate by inexpensive renewals of Marsh cells.

Foot baths automatically sterilized with the antiseptic solution for prevention of "athlete's foot," etc.

Complete Marsh Equipment

Includes battery of Marsh Cells with pyrex manifold, chlorine outlet, electrolytic soda solution feed and absorber coils, battery charger, electrical control board, upper tank containing salt and water for brine feed to cells, middle tank containing soda solution from cells for feed to absorber coils, and lower tank receiving electrolytic sodium hypochlorite solution from the absorber coils for delivery to pool or storage for sanitary uses.



Slate or Stoneware Type

Other Uses for Marsh System

Marsh equipment provides convenient and effective means of supplying solutions for many other purposes as follows:

Hospitals: Highest quality of antiseptic and disinfectant solutions.

Laundries: Neutral electrolytic bleaching solution protects fabrics with reduction of cost in most cases.

Water supplies: Most effective and pleasant form of sterilization.

Sewage problems: Stabilized chlorine solutions produce better results.

Deodorization: For comfort stations in bathing houses, etc.

Country estates, stock farms, dairies: An incomparable disinfectant at the lowest cost.

Algae: Removal of algae and other growths in water is accelerated by chlorination.

Note: The finest and purest soda and bleaching solutions can be made for use in textile, paper and industrial plants.

Co-operative Service

We will be glad to co-operate with architects and engineers in furnishing them with suggestions as to the proper application of the Marsh System to any water purification requirement, as well as to submit quotations, specifications, and other information desired.

Short Specification for Swimming Pools

Note: Architects and engineers can be assured that by specifying a Marsh Electro Chlorinator they are stressing quality and effectiveness of results, the use of modern convenience of electrical control with its ease and simplicity of operation, its dependable accuracy, and above all, pleasantness and non-irritation. They can be assured also that the owner obtains the best at reasonable initial cost, and operating, maintenance and depreciation cost which will keep his overhead at a minimum year in and year out.

Specification—Contractors to furnish and install in accordance with manufacturer's directions, one Marsh Electro Chlorinator, Manufactured by the MARSH ELECTRO CHLORINATION COMPANY, Inc., 101 Park Avenue, New York, N. Y., of sufficient capacity to provide sterilization by available chlorine dosage in the form of non-irritant (neutral) electrolytic sodium hypochlorite solution.

ROBERTS FILTER MANUFACTURING CO.

Swimming Pool Recirculation Systems

638 Columbia Avenue
DARBY, PA.

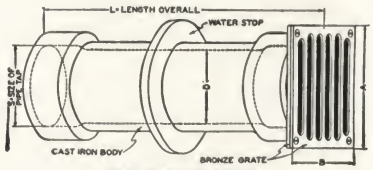
For our pages on Filters, Filtration Plants and Appliances, see Manufacturers' Index

Swimming Pool Sanitation

Recirculation has completely solved the question of swimming pool sanitation. It is mandatory under State Board of Health regulations in many states. With recirculation the water is drawn from the deep end of the pool by a centrifugal pump and returned through filters and sterilizing equipment and in the case of indoor pools, through a heater to the shallow end of the pool.



A typical recirculating plant for indoor pools is shown below, but each large outdoor pool should be given separate study so that the arrangement of pool fittings, recirculating equipment and piping will be such as to insure greatest efficiency and economy.



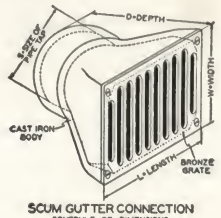
POOL INLET CONNECTION

SCHEDULE OF DIMENSIONS

S	D	L	A	B
1½"	2"	13"	4"	4"
2"	5"	13"	4"	4"
2½"	3"	13"	5"	5"
3"	3"	13"	5"	5"

Design

Where the bathing load is normal, the recirculating plant for pools of not more than 100,000 gallons capacity should be designed to recirculate the entire capacity of the pool in 8 hours. For pools containing greater capacity, a recirculating period of 12 hours can be employed. The rate of filtration should preferably be 3 gallons per square foot of filtering area per minute, but in no case should it exceed 4 gallons per minute per square foot.



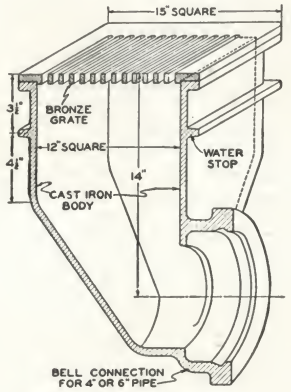
SCUM GUTTER CONNECTION

SCHEDULE OF DIMENSIONS

S	L	W	D
¼"	6"	3"	3½"
½"	6"	3"	3½"
2½"	6"	4"	4"
3"	8"	4"	4"

Co-operation

Our Engineering Department is at the service of architects and engineers engaged in the design, construction, or maintenance of swimming pools. We welcome every opportunity of co-operation. Write for our "Swimming Pool" catalogue containing complete data on the sanitation of swimming pools.



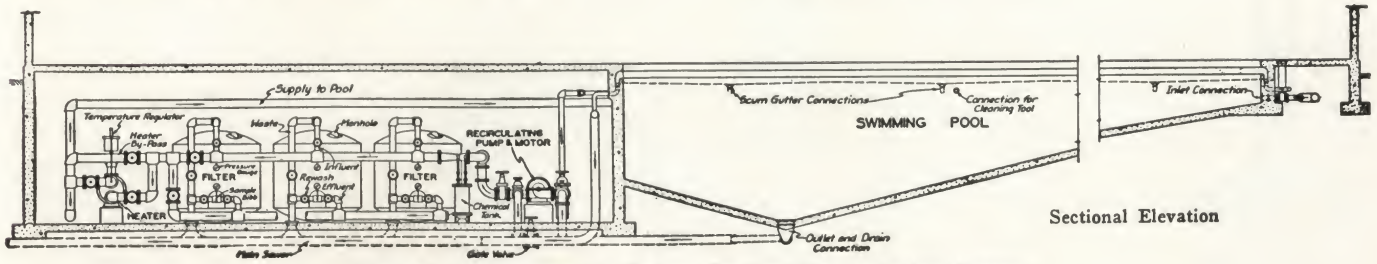
POOL OUTLET AND DRAIN CONNECTION

Specifications

Specification data on all types of Roberts Filters is contained in our pages in the filter section of this catalogue and in SWEET'S ENGINEERING CATALOGUE. Styles "H," "G," "L" and Horizontal are recommended for swimming pool recirculation.

Accessories

We manufacture pool fittings, as shown, hair catchers and other accessories, which will be supplied separate from filters and other recirculating equipment when specified or so ordered.



Sectional Elevation

Typical Arrangement of Swimming Pool Recirculating System

WALLACE & TIERNAN CO. INC.

Manufacturers of Chlorine and Ammonia Control Apparatus

"The Only Safe Water Is a Sterilized Water"

NEWARK, N. J.

MAIN FACTORY
BELLEVILLE, N. J.

BOSTON, MASS.
BRIDGEPORT, CONN.
BUFFALO, N. Y.
CHARLOTTE, N. C.
CHATTANOOGA, TENN.
CHICAGO, ILL.
CLEVELAND, OHIO
COLUMBUS, OHIO
DALLAS, TEX.
DENVER, COLO.
DETROIT, MICH.
FORT WORTH, TEX.
HOUSTON, TEX.
INDIANAPOLIS, IND.
JACKSONVILLE, FLA.
KANSAS CITY, MO.
KNOXVILLE, TENN.
LEXINGTON, KY.
LOS ANGELES, CAL.
MILWAUKEE, WIS.
MINNEAPOLIS, MINN.
NEW YORK, N. Y.
OGDEN, UTAH
OKLAHOMA CITY, OKLA.
OMAHA, NEB.
PHILADELPHIA, PA.
PITTSBURGH, PA.
ROANOKE, VA.
SAN DIEGO, CAL.
SAN FRANCISCO, CAL.
SEATTLE, WASH.
ST. LOUIS, MO.
SYRACUSE, N. Y.
WASHINGTON, D. C.
WICHITA, KAN.

CANADA: Wallace & Tiernan Ltd., MONTREAL, QUE., TORONTO, ONT. and WINNIPEG, MAN.
ENGLAND: Wallace & Tiernan Ltd., LONDON

Chlorination

Chlorination properly applied not only completely sterilizes the water at the point of application but also leaves a certain amount of chlorine in the treated water. This is spoken of as residual chlorine and acts to disinfect immediately any subsequent pollution which may be introduced by bathers or otherwise. It is this residual action that makes chlorination the complete and safe method of sterilizing swimming pool water. At every point in the pool—from top to bottom and from inlet to outlet—this penetrating residual action searches out pollution and disinfects it before it can be transmitted from one bather to another. Over 3500 pools throughout the world are now employing chlorination's certain protection.

Swim in Drinking Water

Ammoniation

A further advantage in swimming pool water purification results from the use of ammonia in addition to chlorine, to form chloramine. Chloramine (chlorine plus ammonia) offers several refinements and benefits over the use of chlorine alone. Chloramine residuals are more stable and persist for longer periods.

On large outdoor pools where the bathing load is heavy and rate of recirculation slow, this persistent chloramine residual increases the factor of safety and provides constant sterilization. Chloramine is not affected by aeration or the actinic rays of the sun, and its use has often resulted in a substantial saving in the operating cost. Chloramine is odorless and tasteless enabling the operator to maintain higher residuals without complaint from bathers. Algae control is more complete by virtue of the stable and persistent residual.

Apparatus

Chlorine may be applied either by solution feed or direct feed, that is, either first mixed with a minor flow of water and the resulting solution applied or applied directly to the water being treated. Of the two, the solution feed method is by far the best as all dangers of incomplete mixing are nullified and mechanical parts for handling gas reduced to a minimum.

Ammonia on the other hand, being far more soluble in water than chlorine, is handled easily by the direct feed method. Ammoniators of this type are similar to direct feed chlorinators, differing only in materials particularly adapted to handling ammonia gas.

The application of such minute quantities of gas as are employed in water treatment requires that apapratus must be carefully and precisely built. Non-corrodible materials must be used and every precaution exercised in design and construction to insure continuity of operation in the important work it has to do.

Wallace & Tiernan Chlorinators and Ammoniators are built to the highest standards. Twenty years' experience in the design and manufacture of gas control apparatus have enabled W & T to eradicate points of weakness and offer equipment so durable, accurate and easy to operate that every demand is satisfied. Over 15,000 units of W & T apparatus are now in use in all parts of the world.

W & T Type MSP Solution Feed Chlorinator

For pools up to 500,000-gal. capacity. Operates on a semi-vacuum principle giving accurate control of small amounts of chlorine with a feed range sufficiently wide to include all changes in bathing loads. Ease of operation and dependable, trouble-free service please both operator and owner.



W & T Type MSP Chlorinator

W & T Type MSV Vacuum Solution Feed Chlorinator

For large pools with heavy bathing loads. Operates on vacuum principle thus doing away with leaks and providing for smoother operation. A survey of repair costs indicates average annual maintenance charges do not exceed one per cent of the initial investment.



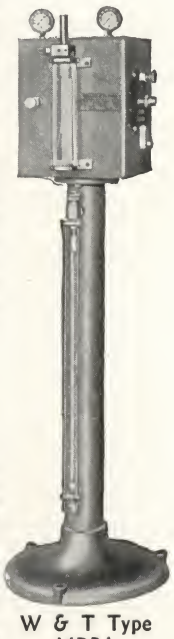
W & T Type MSV Chlorinator
For sterilization of large pools

W & T Chloro Clock

Feeds predetermined quantities of sodium hypochlorite or similar solutions by means of a traveling displacement cylinder operated by clock work. Efficient sterilization for the very small pool. Easy to understand and operate.

W & T Direct Feed Ammoniator

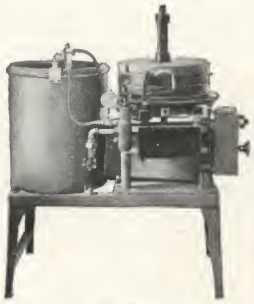
Applies ammonia gas directly to water being treated. Simplified design and sturdy construction make it a fit companion in every way for world famous W & T Chlorinators.



W & T Type MDPA Ammoniator

W & T Electrolytic Chlorinator

For swimming pool operators who wish apparatus to both manufacture and apply chlorine the W & T Electrolytic Chlorinator is efficient, correct equipment. Its operating simplicity and strong construction combine many features not obtainable in other electrolytic chlorinators. Maintenance costs are minimized and satisfactory service is the record of each installation.



W & T Electrolytic Chlorinator

At Your Service

We are prepared to study any problems covering swimming pool sterilization. A nationwide staff in 38 district offices whose responsibility is the continued satisfactory operation of W&T equipment is at your service. Current literature on sanitation of swimming pools and details of W&T equipment are available on request.

NATIONAL MALLEABLE AND STEEL CASTINGS CO.

Manufacturers of Stadium Chair and Bleacher Support Castings

GENERAL OFFICE
10600 Quincy Avenue, CLEVELAND, OHIO

MALLEABLE IRON PLANTS: CLEVELAND, OHIO; INDIANAPOLIS, IND.; CICERO, ILL.
STEEL PLANTS: SHARON, PA.; MELROSE PARK AND CHICAGO, ILL.

Products

NATIONAL STADIUM CHAIR CASTINGS; BLEACHER SUPPORT CASTINGS. Also Malleable Iron and Steel Castings of every description.

Experience, Facilities and Service

Being products of the NATIONAL MALLEABLE AND STEEL CASTINGS CO., National Castings are, of necessity, *quality* products. They have back of them all the experience of more than 60 years devoted to the production of malleable and steel castings, plus the facilities of six modern foundries equipped to produce quantity castings of a quality second to none.

The services of our Engineering and Estimating Department are available to the architect and contractor at all times.

NATIONAL STADIUM CHAIR CASTINGS

National Stadium Chair Castings are made of first quality, rust-resisting malleable iron. They are possessed of strength and durability that make them practically immune to abuse and breakage, as well as to the ravages of time and the elements. All castings are furnished drilled, and painted in any desired color. No bolts are required to hold the seat bottom to the standard, the brackets having a cup shaped projection fitting over a boss on the standard which facilitates installation. We do not furnish the wood, however Maple is recommended, the three back slats being 3x¾-in. held by six wood screws to each standard. The seat bottoms have 6 slats 2⅛x¾-in. held by 12 wood screws per bottom.



Stadium Chairs

About 67,000 National Stadium Seat Castings were furnished for chairs like the above, installed in the New Cleveland Stadium, Cleveland, Ohio

Length is 2⅝-in. less than center line spacing of casting. The spacing usually used is from 18 to 20-in. between center line of the standards. Lugs for securing back boards of seats to posts are located in back of the post on each side to allow splicing. Each standard is anchored with two expansion bolts set in drilled holes in the concrete. These chairs can be rapidly installed in large or small blocks. The standardization of design eliminates the cost of making special patterns, dies and jigs—an economy that is reflected in the comparatively low prices of National Stadium Seat Castings.

Prices and blue prints will gladly be sent on request. Please state quantity of seats contemplated.

NATIONAL BLEACHER SUPPORT CASTINGS

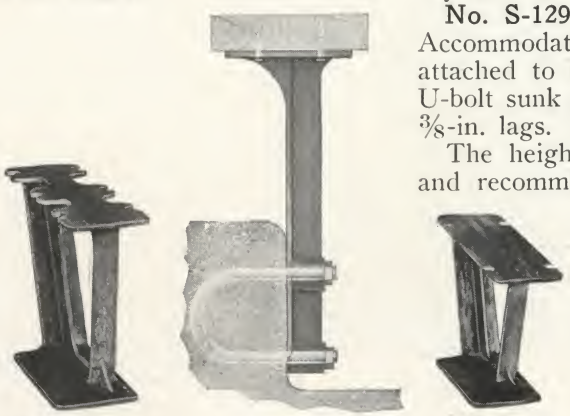
Like the stadium chair castings, National Bleacher Support Castings are made of malleable iron and have an equally great resistance against breakage and rust. They are furnished painted in any desired color, holes drilled ready for use and are quickly and easily installed. The top of all of these castings are made at an angle to allow drainage from the seat plank.

We have furnished castings for the following stadiums:

Cleveland
Madison Square Garden
Florida University
St. Louis University
Butler University
Southern Methodist
St. Louis Ball Park
Texas State Fair Grounds at Dallas
Purdue University
Wooster College
Oberlin College
Firestone Park at Akron

Blue prints and prices on request. Please state quantity involved.

No. S-93 Bleacher Support Casting — Accommodates 2x8 or 2x10-in. seat plank. Is securely attached to the face of the riser by means of a ⅝-in. U-bolt which is inserted in the concrete. This gives maximum anchorage and tread is left free of obstruction, facilitating cleaning work. The casting is 15½-in. high. The recommended spacing is 4 ft. We can furnish the U-bolts. The holes through which the U-bolt pass are oval to allow adjustment.



No. S-129 No. S-93 No. S-130

No. S-129 Bleacher Support Castings—Accommodates 2x8 or 2x10-in. seat plank. Is attached to the tread of the riser by ½-in. U-bolt sunk in concrete. Top has 6 slots for ⅜-in. lags. We can furnish the U-bolts.

The height of casting at front is 7⅜ in. and recommended spacing is 4 ft.

No. S-130 Bleacher Support Casting—Accommodates 2x8 or 2x10-in. seat plank and is similar to No. S-129 in design and method of securing to tread or riser. Top has 4 slots for ⅜-in. lags. The height of the casting at front is 6⅜-in. Recommended spacing is 4 ft.

F. J. MULLANEY IRON WORKS

Portable Steel Bleachers and Grand Stands

NORTH BERGEN, N. J.

NEW ENGLAND REPRESENTATIVE: The E. C. Church Co., 134-136 West Exchange Street, PROVIDENCE, R. I.

TYPE "C" PORTABLE BLEACHERS

Applications

Type "C" Portable Bleachers are suitable for gymnasiums, athletic fields, airports, reviewing stands and similar uses. They can be had with standard features such as aisles, double floorboards, railings, etc.

Construction Details

Type "C" Portable Bleachers are made in sections 14 ft. long, with as many seat rows as required, up to and including sixteen rows. Each section is composed of four steel channel stringers with angle seat and floor carriers which are riveted and welded to the stringers. Each stringer is fitted with portable connections to the steel supports, the latter being placed on 6-ft. or 8-ft. centers, according to the number of seat rows. Stringers are placed on 4-ft. centers with steel tie rods top and bottom. Standard sections are provided with tie members sufficient in number for erecting bleachers as one unit or in several units as desired.

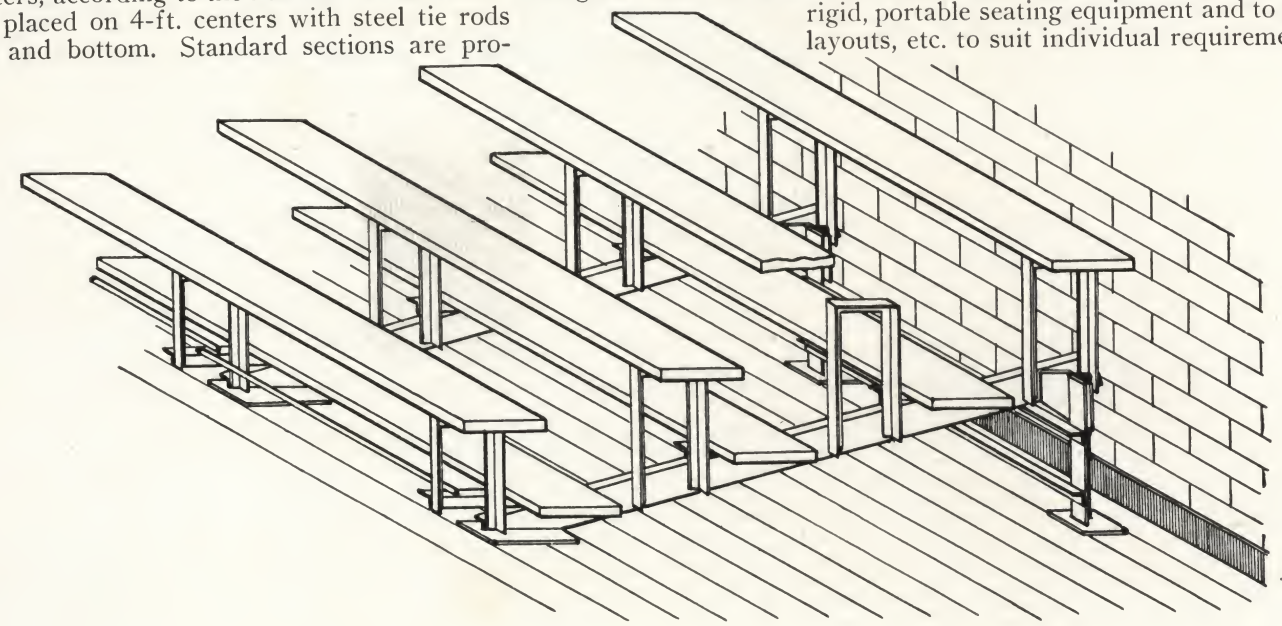
All parts are interchangeable and the entire bleacher is quickly erected or knocked-down.

Seats and Floorboards—Of clear Douglas Fir, 10x1¼ in. thick before dressing. All lumber is dressed on four sides. The top sides of the boards have beveled corners, the underside is fitted with steel plates to engage angle carriers on the stringers.

Finish—All surfaces and materials are given two coats of a high-grade protective gray paint at the factory.

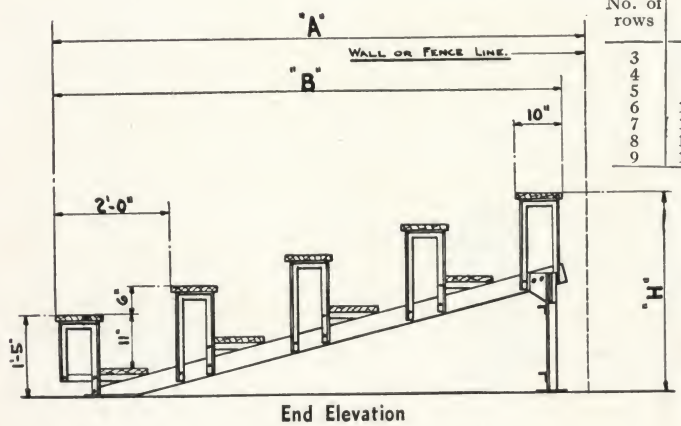
Service

Type "C" Portable Bleachers have many applications and we will be glad to confer with anyone seeking safe, rigid, portable seating equipment and to plan layouts, etc. to suit individual requirements.

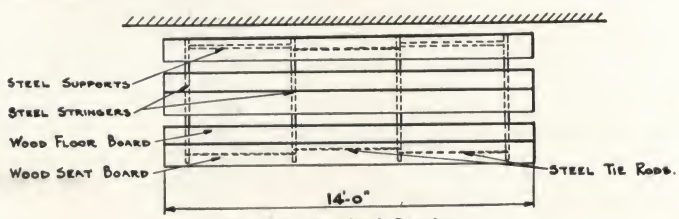


DATA, STANDARD 14-FT. LONG SECTION, TYPE "C" PORTABLE BLEACHERS

No. of rows	A	B	H	No. of seats per sec.	No. of rows	A	B	H	No. of seats per sec.
3	5′ 3″	4′ 10″	2′ 5″	33	10	19′ 3″	18′ 10″	5′ 11″	110
4	7′ 3″	6′ 10″	2′ 11″	44	11	21′ 3″	20′ 10″	6′ 5″	121
5	9′ 3″	8′ 10″	3′ 5″	55	12	23′ 3″	22′ 10″	6′ 11″	132
6	11′ 3″	10′ 10″	3′ 11″	66	13	25′ 3″	24′ 10″	7′ 5″	143
7	13′ 3″	12′ 10″	4′ 5″	77	14	27′ 3″	26′ 10″	7′ 11″	154
8	15′ 3″	14′ 10″	4′ 11″	88	15	29′ 3″	28′ 10″	8′ 5″	165
9	17′ 3″	16′ 10″	5′ 5″	99	16	31′ 3″	30′ 10″	8′ 11″	176



End Elevation



Plan of Standard Section

PORETE MFG. CO.

Makers and Erectors of Permanent Steel and Concrete Seating Decks for Stadiums, Arenas and Auditoriums

TELEPHONE
Kearny 2-4070

Porete Avenue
NORTH ARLINGTON, N. J.

For our pages on Roofs, Floors and Nailing Concrete, see Manufacturers' Index

THE PARTHENON SEATING SYSTEM

An improved steel and concrete deck construction for seating indoor or outdoor crowds. Riser, seat and tread units are fabricated at a central plant and assembled at the site.

Features

(See Standard Details)

(1) Dense, durable 1½-in. thick precast reinforced concrete slabs. (2) Elastic bearing strips. (3) Impervious joints. (4) Edge grain all heartwood seating. (5) Seats fastened to brackets from below. (6) Structural steel seat brackets integrated with (7) built-up steel riser joists spaced and braced by (8) separator tie bolts. All steelwork heavily paint coated before erection.

Suitable for all types of substructures and architectural designs, the outstanding advantages are light dead weight of only 28 lbs. per sq. ft., flexibility due to numerous expansion joints 35 ins. on centers, high quality workmanship, rapid field assembly, and low cost.

Parthenon Service

(a) Furnishing of deck materials. (b) Furnishing of materials for substructures of masonry, concrete or structural steel. (c) Furnishing and erection of all or part of the above. (d) Parthenon Engineering Department under the executive direction of a nationally recognized stadium engineer. We offer complete design and cost consultation and co-operation to architects and engineers.

Development

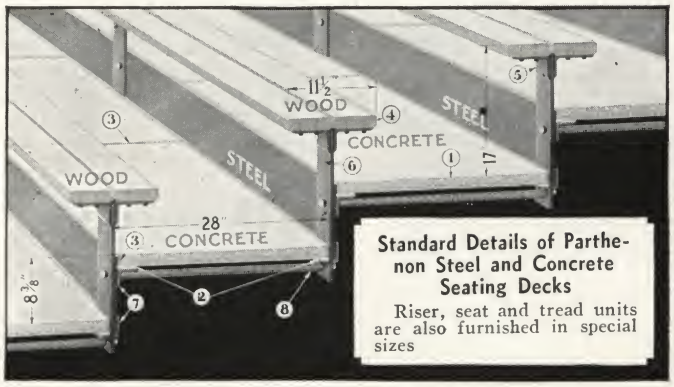
The two general types of crowd seating accommodations are *bleachers* and *stands*. *Bleachers* have decks with open riser spaces, being used where cheapness and/or portability are desired. Stands have solid risers which carry loads and brace the deck. They are used for all important indoor and outdoor seating where permanence and dignity are essential. *Grandstands* are stands with roofs.

Experience of many years with ordinary field poured monolithic concrete, as used in stand construction, indicated to investigators a great deal of deck deterioration. It was mainly due to excessive deck dead load and lack of expansion joints. This caused foundation settlement with consequent structural cracks and spalls. Poor workmanship was also a factor. Demand for improvement was met with a composite deck design of structural steel riser joists supporting precast reinforced concrete tread slabs of superior manufacture. First used for professional baseball stadiums in 1925, this design eliminates practically all the deterioration factors noted.

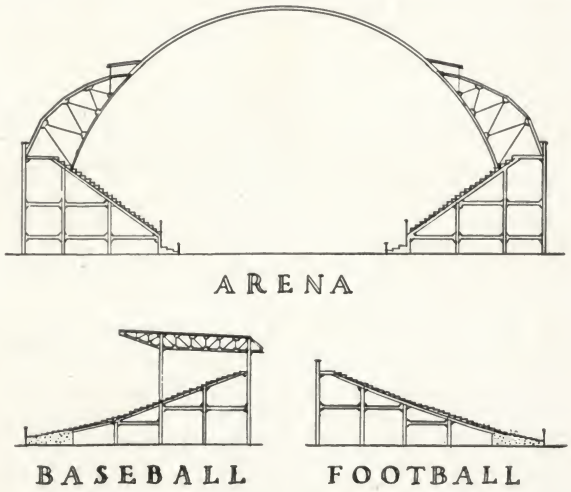
The composite method, with the integral seat bracket and other improvements, is the Parthenon System now available for large or small seating accommodations in stadiums, auditoriums, drill halls, field houses, gymnasiums, arenas, race track grandstands, and outdoor theatres.

Literature

Ask for literature and full information about the Parthenon System. If you are starting plans for indoor or outdoor seating, consult our engineers without obligation. They will advise fully regarding sight lines, layout and structure, and you will be assured that the finished design reflects the latest and best features of modern crowd seating accommodations.



Parthenon System Decks are used over substructures of masonry, concrete, or structural steel, and are adapted to all architectural designs



Lightness, flexibility and stiffness against crowd sway are important in large indoor or outdoor seating decks. Parthenon Decks are designed to meet all conditions economically



Parthenon Deck, Franklin School Field, Ridgewood, N. J.

Especially adapted for small school and recreation field stands requiring permanence and dignity. Starting with a small initial installation, units of 250 seats may be added from time to time

THE BRUNSWICK-BALKE-COLLENDER CO.

Manufacturers of Billiard Tables, Bowling Alleys, Billiard and Bowling Supplies, Squash Courts, Shuffle Boards and Closet Seats

GENERAL OFFICE
623-633 South Wabash Avenue
CHICAGO, ILL.

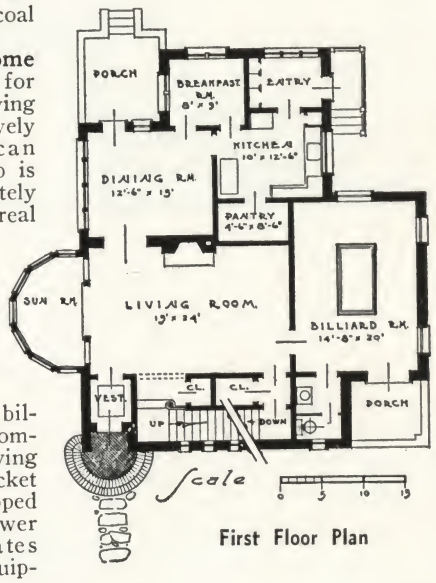
TELEPHONE
Wabash 4020

BRANCHES IN PRINCIPAL CITIES

For our pages on Closet Seats, see Manufacturers' Index

Billiard Tables for the Home

The same manufacturing facilities that produce professional billiard tables are devoted to the production of home tables. The most desirable location for a home billiard table is on the first floor and, if possible, the billiard room should join the dining room. Since the development of oil and gas burners, many of the smaller houses are providing basement billiard rooms in space no longer needed for coal bins, furnaces, etc.



First Floor Plan

Brunswick "Home Club" Table—Ideal for dining room or living room use and attractively designed in American walnut. The table top is removable, immediately converting it into a real billiard table. The cost is only slightly more than a dining or living room table of attractive design. Complete with all playing equipment.

Available in two styles—as a pocket billiard table or as a combination table for playing both carom and pocket billiards. It is equipped with an accessory drawer which accommodates complete playing equipment.

Table and Room Dimensions—A 3x6-ft. table requires a room size not less than 11x14 ft.; 3½x7-ft. table not less than 12x15 ft.

Combination Table with Interchangeable Cushions—Achieved through the use of two sets of cushions—one for carom billiards and a set for pocket billiards—quickly and easily interchanged by opening and closing the hand levers under the rails which lock either set firmly in place. A box is furnished to hold the set of cushions not in use.

Brunswick "Junior Grand" Table—Designed along lines appropriate for a home having a room or other space available for recreation. Made in two-tone American walnut with vein line ornamentation and hand rubbed finish and is available in two styles—for pocket billiards, or as a combination table for playing both carom and pocket billiards. It is equipped with disappearing accessory drawers accommodating complete playing equipment.

Table and Room Dimensions—A 3x6-ft. table requires a room size not less than 11x14 ft.; 3½x7-ft. table not less than 12x15 ft.; 4x8-ft. table not less than 13x17 ft.

Brunswick "Grand" Regulation Table, Size 4½x9 ft.—Especially designed for homes having a room suited to a billiard table of full regulation size. It is built of highly figured butt walnut two-tone finish, and decorated with vein line ornamentation on frame, rails and legs.

Available in three styles—as a carom billiard table, as a pocket billiard table, or as a combination carom and pocket billiard table with convertible rails. Equipped with disappearing accessory drawer. Room size required, not less than 14x18 ft.

Recreation Clubs and Commercial Establishments

As a result of over 36 years' extensive experience we have developed and maintain a thoroughly trained organization, who has made a special study of the requirements of modern recreation centers and will gladly, without charge, co-operate with architects. For commercial establishments or recreation centers, upper floors or basements may be utilized to advantage for billiard rooms and bowling alleys; basement ceilings, of course, should be of sufficient height to give proper ventilation.

The following table gives the dimensions of the four sizes of billiard tables manufactured for the trade:

Trade sizes	Actual measurements between extreme outside edges of opposite rails	Trade sizes	Actual measurements between extreme outside edges of opposite rails
4 x 8′	4′ 7½″ x 8′ 5½″	5 x 10′	5′ 5½″ x 10′ 1½″
4½ x 9′	4′ 11½″ x 9′ 1½″	6 x 12′	6′ 8 ″ x 12′ 5½″

Between tables, 5 ft. is best; in emergency not less than 4 ft. From table edge to wall, 6 ft. is preferable, especially where wall seating is provided; in emergency not less than 5 ft.

Regulation Bowling Alleys

On following page will be found plans of alleys in groups, the one for six shows amount of space required for four and two as well as six regulation bowling alleys. Also plan of three and a single pair showing center ball return. Dimensions are definite and should be maintained to meet with the official American Bowling Congress rules and regulations.

Concrete Foundation Including Provision for Pit—The ½-in. scale cross section details indicate our suggested requirements for foundations to permit proper installation on solid concrete floors. Where alleys are to be installed in basement or on first floor on concrete foundations, a depression must be provided to receive the finished pit, this work to be executed by other contractors.

Special Improved Subfoundations—We furnish and install improved subfoundations for installations above first floor, which is our system of noiseproofing and provides necessary height required for pit depression.

Space for Players' and Spectators' Seats—Space (3 ft.) for one row of players' benches should be provided at approach end in addition to the over-all length of alleys (82 ft.). Space for an aisle should be provided, if possible, without loss of units, alongside or between alleys or in post areas, sufficiently wide to allow access to pin boys' room and storage space, which is usually located at rear of room.

Lighting—Lighting is a very important factor and should receive serious consideration; different size rooms and surroundings require different systems. We furnish suggestions and instructions.

Ventilation—Proper ventilation should be given due consideration. Draughts should be avoided. Properly designed artificial ventilation should be used as a protection to the health of the patrons.

Squash Tennis and Squash Racquet Courts

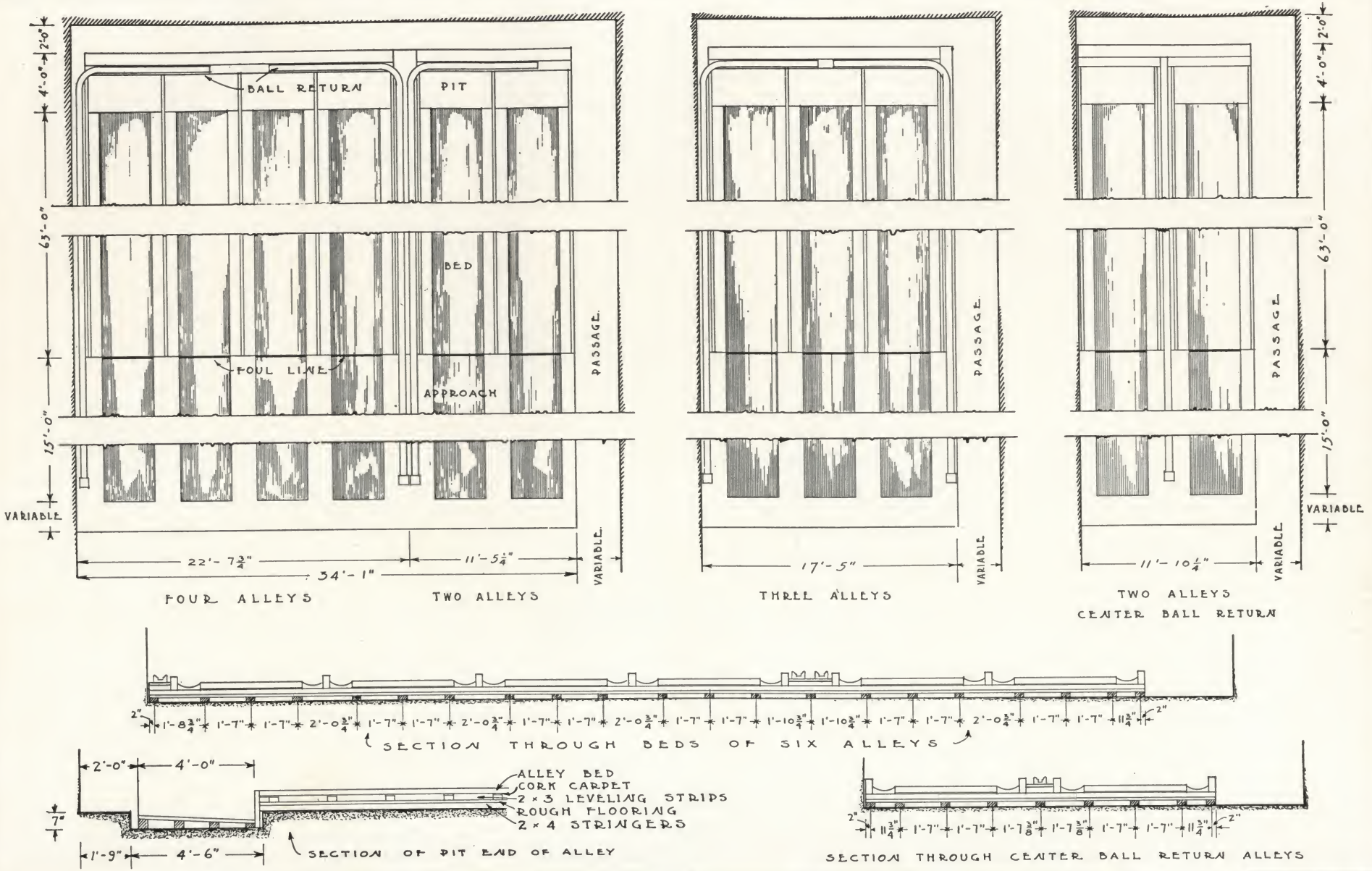
Building a "Standard" Squash court is a job for an expert working with selected woods. Brunswick supplies the same uniformity of workmanship and materials on every installation. There are Brunswick Court installations at the leading clubs, homes, universities and colleges throughout the United States. There is a Brunswick Guarantee of Satisfaction with every Brunswick Squash Tennis or Squash Racquet Court. Write for details and specifications.

Shuffle Boards

Brunswick Shuffle Boards are made from selected materials expertly turned and finished, and carried in stock in 28-ft. lengths only—the exact length of the bed. Special sizes made to order on reasonably short notice. Write for additional information.

Experience and Co-operative Service

Our technical and practical organization handles and economically solves all problems pertaining to design and proper installation of bowling alleys, squash courts, billiard tables, and shuffle boards. Blue prints, estimates, and recommendations on any problem regarding Brunswick products furnished gratis. Write the general offices.



THE BRUNSWICK-BALKE-COLLENDER COMPANY

PLANS AND DETAILS OF BOWLING ALLEYS
STANDARD GROUP LAYOUTS

PLATE NO. 1

THE BRUNSWICK-BALKE-COLLENDER CO.

C 823

H. V. BRIGHT

Manufacturer of Turnstile Equipment for Entrances and Exits

1104 Prospect Avenue, CLEVELAND, OHIO

Products

TURNSTILES for any use desired, including Registering Automatic Patterns, Coin Controlled and Non-registering Turnstiles; for use at swimming pools, museums, libraries, pay-toilet rooms, stadia, baseball parks, university or high school athletic fields, amusement parks, expositions, fair grounds, self-service groceries, ferry and boat landings. Estimates furnished for subways and elevated railroad turnstile equipment.

HARDWARE for metal or wood Exits or Baffle Gates, including ratchet, dogs, etc.

Also Ticket Canceling Machines.

This concern has been manufacturing and furnishing turnstiles for more than twenty-five years and for use at many different places. *Note list of some of the users below.*

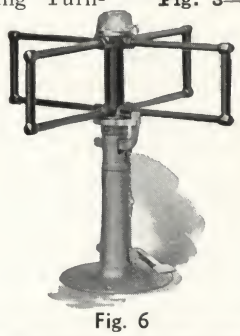


Fig. 6

"Bright's" Turnstiles

Automatic Pattern Turnstile "D"—Eliminates the necessity of foot lever release or other mechanical movement by attendant, so that patrons operate turnstile. Slight pressure on foot lever will stop arms at any point desired. Can be furnished with foot lever device so arranged that turnstile cannot be operated until the foot lever is held down by attendant. Equipped with air shock absorbers that check the arm at each quarter-turn.

Fig. 1—With wood top arms of walnut finish. Recommended for use where turnstile is not exposed to weather. Height to top of register 38¼ in.; to top of arms 34 in.; length of arms overall 39 in.

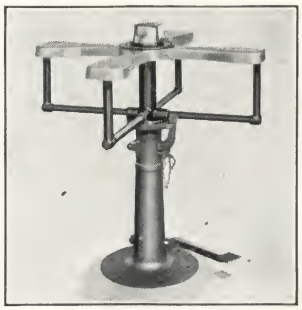


Fig. 5

Fig. 2—With aluminum top arms of light gray finish. Height to top of register 38¼ in.; to top of arms 34 in.; to bottom of arms 25 in.; length of arms overall 39 in.

Fig. 3—With the open type polished brass top arms for use where something more ornate is desired. Height to top of register 38¼ in.; to top of arms 34 in.; length of arms overall 39 in.

Coin Controlled Turnstiles—An arrangement of a coin machine working in conjunction with a turnstile. Operates through admission in slot of one coin of any denomination desired, which allows the arms to be released by the patron. Automatic operation. No attendant necessary.

Fig. 4—Height to top of register 38½ in.; to top of arms 34½ in.; to bottom of arms 25¼ in.; width overall to outside of housing 41 in.; length of machine overall 60 in.

Turnstile Registers—Turnstile can be equipped with printing or plain register—either registers from 1 to 100,000.

Printing register records opening and closing numbers on a specially prepared slip which is inserted in an opening and printed by the turning of a key. Registering turnstiles are made to revolve either way, but are not reversible.

Fig. 5—Style "A," equipped with the broad aluminum top arms, thereby cutting down the space between the top arms and lessening the possibility of two people passing through the turnstile on one registration.

Fig. 6—Style "A," used where an inexpensive turnstile is desired. It is under control of foot lever. Furnished with either printing or plain register. *Can also be furnished in the non-registering pattern for use as an exit.* Height to top of register 40½ in.; to top of arms 36 in.; to bottom of arms 24½ in.; length of arms overall 39 in.

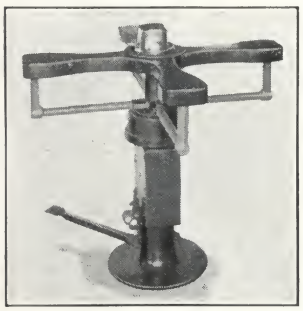


Fig. 1



Fig. 2

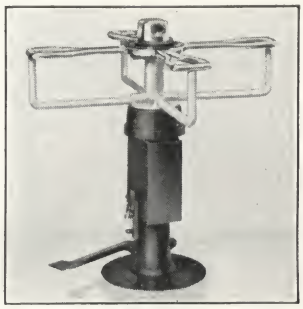


Fig. 3

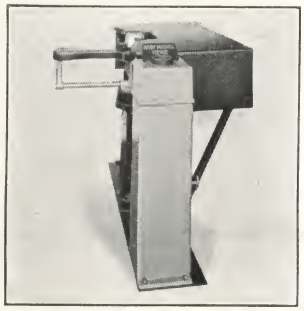
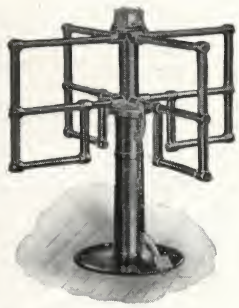
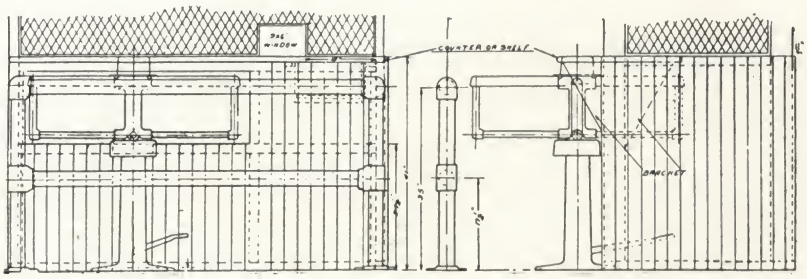


Fig. 4

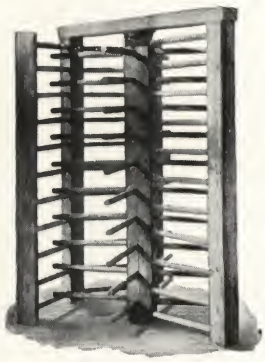


Registering Turnstile "B"

Equipped with the drop arms. This is a medium priced turnstile with foot lever control. Also furnished without foot lever and register and arranged to turn only one way for an exit turnstile. Height to top of register 40½ in.; to top of arms 36 in.; to bottom of drop arms 16½ in.; length of arms overall 39 in.



Turnstile Installation with Arms and Foot Lever Extending Into the Booth



Wood Exit Turnstile or Baffle Gate

Operates **one way only,** allowing people to leave but not to enter. No attendant necessary. *Hardware only is furnished* for this turnstile, consisting of the top and bottom castings, ratchet plate, dogs, etc. Blueprint furnished giving dimensions, etc. of principal wood parts used in the construction. Complete turnstile can be built in your own locality

Some Users of "Bright's" Turnstiles

American and National League Baseball Clubs, all clubs
Playland Amusement Park, Rye, N. Y.
Mattoon Township Park Commission, Mattoon, Ill.
Ambassador Bridge, Detroit, Mich.
Coney Island, Cincinnati, Ohio
Wisconsin State Fair, West Allis, Wis.
Woodland Hills Park Municipal Swimming Pool, Cleveland, Ohio
George Washington's Home, Mount Vernon, Va.
Board of Park Commissioners, Wilmington, Del.
University of Kansas Athletic Field, Lawrence, Kan.
Chrysler Tower, New York, N. Y.
Niagara Falls State Reservation, Niagara Falls, N. Y.
Chicago Stadium Corporation, Chicago, Ill.
Miami Jockey Club, Miami, Fla.
Arlington Race Track, Arlington Heights, Ill.
Cleveland Municipal Stadium, Cleveland, Ohio
Redland Swimming Club, Charlottesville, Va.
Municipal Swimming Pool, Oakland, Cal.
Nippon Race Club, Yokohama, Japan
Bay Shore Kennel Club, Belmont, Cal.

PEREY TURNSTILES

MANUFACTURED BY
PEREY MANUFACTURING CO., INC.
101 Park Avenue, NEW YORK, N. Y.

Perey Turnstiles Are Standard Equipment

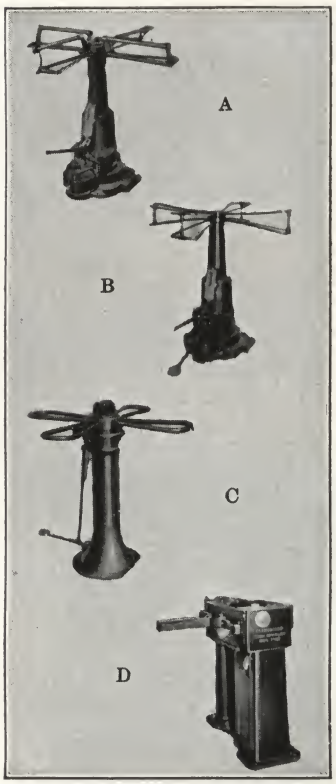
Perey Turnstiles, Passimeters, Coinpassors, Registering Fare Boxes, and Roto-Gates are recognized as standard equipment for collecting fares and admission fees, maintaining accurate registration of attendance, controlling the direction of the movement of the public and safeguarding exits.

What Perey Turnstiles Do

Perey Turnstiles serve both as gates and registers and may be used either with or without tickets.

They give an independent, error-proof, untamperable check on cash received, not controlled by the cashier or ticket seller, since the registration is made by the patrons themselves as they pass through the turnstile.

They prevent pilfering or fraud on the part of the cashiers or ticket sellers, prevent "gate crashing" through regular entrances, speed up the handling of patrons, save labor costs.



A—Automatic Perey Passimeter

Fast registering turnstile for entrance or exit, unlocked by patron pushing arm while passing through, allowing cashier or ticket taker to devote utmost attention to making change or inspecting tickets, avoiding error or confusion. Can be held locked by means of lever at base whenever necessary. Positive lock and backlock permit only one-quarter turn forward and prevent backward turning. Other features: built-in tamperproof 5-digit recording meter; spread type arms; shock absorber; compression throw; clockwise or counter-clockwise rotation. Standard finish, black. Net weight, 240 lbs. Spread of arms, 38 ins.; height to top of arms, 37 ins.

B—Standard Perey Passimeter

Standard registering turnstile for pay-enter entrances or pay-leave exits; always locked and must be unlocked by operator tripping hand or foot control levers for the passing of one person, after which it automatically relocks. Special features: tamperproof, 5-digit recording meter built into pedestal; solid brass spread type arms; automatic lock and positive backlock; shock absorber; levers for both hand and foot control; compression carrying throw; clockwise or counter-clockwise rotation. Standard finish, battleship gray. Net weight, 240 lbs. Spread of arms, 38 ins.; height to top of arms, 36 ins.

C—Popular Perey Turnstile

Reliable registering turnstile of Perey quality at a moderate price, "always locked" type, unlocked by a foot treadle. Recording meter, geared directly to shaft, enclosed and fitted with lock. "Spread type" arms. Rotation clockwise or counter-clockwise. Standard finish, black. Net weight, 165 lbs.; spread of arms, 39 ins.; height to top of arms, 36 ins.; height to top of register, 40½ ins.

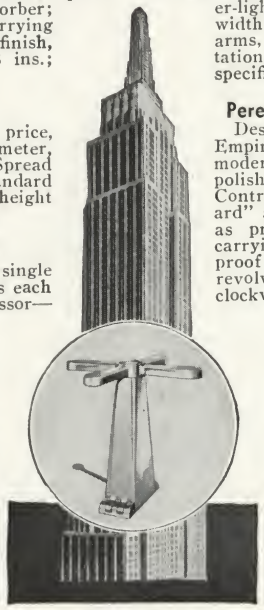
D—Perey Coinpassor—A Coin-controlled Turnstile

For use where a uniform admission fee, payable with a single coin, is collected. Collects money, admits patron and registers each coin on tamperproof recording meter. Coin unlocks Coinpassor—no operator required. Entirely mechanical, self-contained in one unit. Installed simply by bolting to floor. Can be arranged to operate on any coin or metal token, either one- or two-way. Standard features: wood arms; steel base and coin receptacle compartment; nickel plated coin slot; tamperproof recording meter; clockwise or counter-clockwise rotation, as specified. Specify coin on which it is to operate. Standard finish, gray. Net weight, 700 lbs. Height over all, 38 in.; width across top, 41½ ins.; length across top, 54½ ins.; floor dimensions, 37x15 ins.

Can be furnished in a smaller model—Perey "Little Giant" Coinpassor. Calibrated to operate on any coin or token. Operation similar to Heavy Duty type. Arms are cast aluminum; pedestal and coin compartment are heavy gauge sheet steel. Specifications on request.

E—No. 10 Perey Turnstile

Non-registering and non-locking, for enforcing one-way movement of pedestrian traffic. Strongly built and will stand hard usage either indoors or out. Arms are drop type. Turns in one direction only, clockwise or counter-clockwise, as specified. Standard finish, aluminum bronze. Net weight, 75 lbs. Spread of arms, 40 ins.; height to top of arms, 36 ins.; height to bottom of arms, 23 ins.



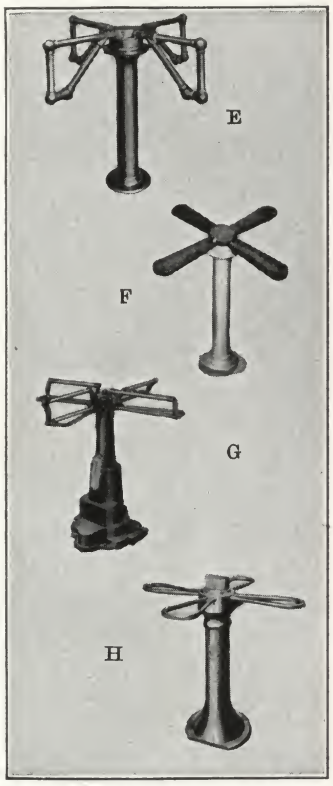
Empire State Building

F—Perey No. 11 Turnstile and No. 12 Turnstile Stand

Non-registering and non-locking, for enforcing one-way pedestrian traffic in any indoor location only. Head and arms of solid oak, highly polished. Furnished without pedestal for mounting on counter or railing, post or table, or with Perey Stand for mounting at proper height. Clockwise or counter-clockwise rotation, as specified. Net weight, 27 lbs.; spread of arms, 40 ins.; height to top of arms, 4 ins. Perey No. 12 Turnstile Stand, net weight, 43 lbs.; height, 31 ins.

G—Perey "Non-attendant" Passimeter

Records attendance accurately and automatically without attendants at such public places as museums, libraries, community centers, parks, zoos, botanical gardens, stadia, playgrounds, etc. Recording meter in pedestal is geared directly to rotating shaft and is accurate and tamperproof. Head and pedestal are cast iron, arms are spread type steel and brass tubing. Very fast action. Equipped with compression carrying throw, built-in shock absorber. Clockwise or counter-clockwise rotation, as specified. Standard finish, black. Spread of arms, 38 ins.; height to top of arms, 37 ins.; net weight, 240 lbs.

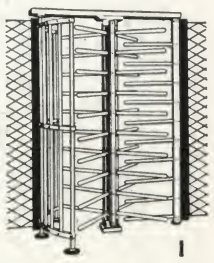


H—Perey Bronze Museum Type Turnstile

Handsome, made entirely of art bronze, especially adapted for use in museums, art galleries, libraries, auditoriums, and other public buildings, to register attendance and to regulate traffic. Pedestal and head are bronze, arms are "spread type" of heavy 1-in. bronze tubing. The 5-digit Perey recording meter is enclosed in a decorated bronze casing. Turnstile is non-locking and rotates in one direction only, either clockwise or counter-clockwise, as specified. Spread of arms, 39 ins.; height to top of arms, 36 ins.; height to top of register, 40½ ins.

I—Perey Roto-Gate

A high, one-way revolving gate for unattended exits and for enforcing one-way movement of pedestrian traffic, without attendants. Furnished complete, knocked down, and can be quickly erected, no special skill required. Constructed entirely of rust resisting metal, attractive looking, noiseless in operation, feather-light in action. Height overall, 90 ins., width overall, 65 ins., space between arms, 5⅝ ins.; net weight, 650 lbs. Rotation, clockwise or counter-clockwise, as specified.



I

Perey Empire State Model Passimeter

Designed for Observation Tower of Empire State Building, and thoroughly modern in treatment. Head and arms are polished aluminum, pedestal is cast iron. Control is either "Automatic" or "Standard" as described in paragraphs A and B, as preferred. Fitted with compression carrying throw, a Perey 5-digit, tamperproof recording meter set into pedestal and geared directly to revolving shaft. Mechanism is silent in operation. Rotation clockwise or counter-clockwise, as specified.

Where Perey Turnstiles Are Used

Swimming pools	Bathhouses	Fair grounds
Amusement parks	Public parks	Zoos
Public lavatories	Museums	Railroads
Botanical gardens	Subways	Ferries
Boat piers	Athletic stadia	Street Cars and Busses

Representative Perey Turnstile Users

Bronxdale Swimming Pool, New York
Westchester County, N. Y., Park Commission
Long Island State Park Commission
New York Subways and Elevated Railways
Philadelphia Subways and Elevated Railways
Boston Elevated Railway, Boston
Boston Revere Beach & Lynn Ry., Boston
Whitney Memorial Gymnasium, Yale University
Metropolitan Museum of Art, New York
Century of Progress Exposition, Chicago

FOLGER ADAM

Prison Cell Constructor—Penal Engineer
Manufacturer of Prison Locks, Locking Devices, Prison Equipment
JOLIET, ILL.

Products

Combination Key and Keyless Locking Devices; Selective non-opening Locking Devices; Selective and Operating Keyless Locking Devices; Dead and Snap Locks for both Swinging and Sliding Doors; Lever Handle Dead and Snap Locks for Tubular Steel Doors; Ball Bearing Prison Hinges; Headless Prison "Security Screws"; Cremone Prison Bolts; Specialized Engineering Service for Prison Steel Work.

Experience

For the past thirty years we have been engaged in designing steel work and locking devices for prisons, reformatories and jails.

We offer, without obligation, to architects, engineers, and prison officials, the experience gathered in connection with the equipment of the following list of large penal institutions in the United States and Canada:

Principal Installations

Wisconsin State Prison (Northwest Wing)	Waupun, Wis.
Minnesota State Prison	Stillwater, Minn.
United States Federal Penitentiary (East Wing)	Leavenworth, Kan.
United States Military Prison	Ft. Leavenworth, Kan.
Minneapolis City Workhouse	Minneapolis, Minn.
Montreal District Jail	Bordeaux, Que.
Ontario Provincial Reformatory	Guelph, Ont.
Washington State Reformatory	Monroe, Wash.
Wisconsin State Prison (Southwest Wing)	Waupun, Wis.
Missouri State Penitentiary (East Wing)	Jefferson City, Mo.
Milwaukee House of Correction	Milwaukee, Wis.
Missouri State Penitentiary (West Wing)	Jefferson City, Mo.
Toronto Industrial Farm (Cottage No. 2)	Toronto, Ont.
Alberta Provincial Prison (Wing No. 1)	Ft. Saskatchewan, Alta.
United States Federal Penitentiary (West Wing)	Atlanta, Ga.
United States Federal Penitentiary (South Wing)	Atlanta, Ga.
Illinois State Penitentiary (Circular Cell House)	Joliet, Ill.
Minnesota State Reformatory	St. Cloud, Minn.
United States Federal Penitentiary (North Wing)	Atlanta, Ga.
Wisconsin State Reformatory	Green Bay, Wis.
Illinois State Penitentiary (Cell House No. 2)	Joliet, Ill.
Illinois State Penitentiary (Cell House No. 3)	Joliet, Ill.
South Dakota State Penitentiary (East Wing)	Sioux Falls, S. D.
South Dakota State Penitentiary (West Wing)	Sioux Falls, S. D.
Saskatchewan Provincial Prison (East Wing)	Prince Albert, Sask.
Saskatchewan Provincial Prison (West Wing)	Prince Albert, Sask.
Michigan State Prison	Jackson, Mich.
Illinois State Penitentiary	Chester, Ill.
Indiana State Reformatory	Pendleton, Ind.
Wisconsin State Prison	Waupun, Wis.
Public Safety Building	St. Paul, Minn.
Eastern State Penitentiary	Gratersford, Pa.
Illinois State Reformatory	Pontiac, Ill.
Women's Detention Prison	New York, N. Y.
Illinois State Penitentiary	Stateville, Ill.
Illinois State Penitentiary	Menard, Ill.
Alberta Provincial Prison (Wing No. 2)	Ft. Saskatchewan, Alta.
Montreal District Jail	Bordeaux, Que.



THE FRIES AND SON STEEL CONSTRUCTION AND ENGINEERING CO., INC.

Expert Jail and Prison Builders

TELEPHONE
Hemlock 1635

Second and Madison Avenues
COVINGTON, KY.

Products

Builders of CELLS for Jails, Prisons, Police Stations and Lockups, equipped with Automatic Sliding Door and Hand Pull, and Hydraulic Locking Devices; Prison Plumbing Fixtures; Round, Hexagon, Rib and Flat Interlocking Bar Grating for window guards, corridor gratings.

Experience

THE FRIES AND SON STEEL CONSTRUCTION AND ENGINEERING CO., INC., are backed by an organization made up of men whose experience ranges from twenty to fifty years, and who have built some of the largest jails and prisons in the United States.

Tool Resisting Steel

We use nine-ply tool resisting steel for all grated work made according to standard specification, in place of regular five-ply steel referred to in specification as tool resisting, consisting of alternate layers of low carbon and high carbon steel, all layers thoroughly welded and the high carbon steel layers hardened, to resist action of cutting tools.

Where absolute security is desired, we advise using our *"Fries Special"* Heat and Tool Resisting Steel for all exterior sides of cell blocks, also for the window gratings.

Cell Door Locking Device

Our manually operated fully selective, keyless locking device is used in connection with sliding doors and is designed on lines of durability and simplicity as well as neatness. The device has no springs, adjusting nuts or collars that might come loose and cause trouble. Our device permits operator to open or close each door individually, or close or open all doors *collectively,* although some doors may be in open position while others are in closed position, or open or close any combination of doors desired.

Our locking device is entirely and securely encased by steel plate rendering it *tamperproof.*

Automatic Corridor Lock

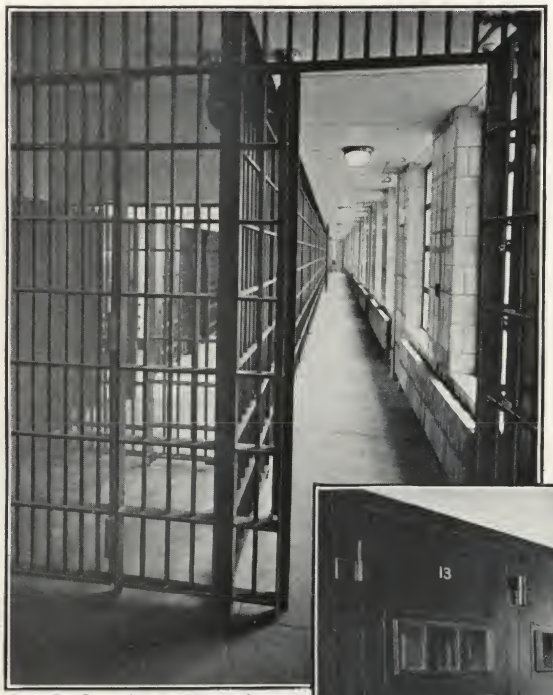
Our corridor doors are provided with a simple locking bar, operated from within the lever box. The corridor door locks automatically on lightly closing same, and is deadlocked. This lock is tamperproof.

Special Equipment

We furnish everything necessary for the completed jail or prison installation, such as, one-piece, sanitary, combination lavatory and toilet niche seat; electric light boxes; latest improved jail plumbing fixtures; speaking panels; plate and glass partitions; steel entrance doors; bunks; padded cells; steel stairs and window guards.

Engineering Department

Our Engineering Department will gladly assist architects, engineers and officials who are contemplating any jail or prison construction. We will furnish up-to-date layouts, detail drawings, specifications and estimates for jail equipment, without charge.



Guards Corridor in Westchester County Jail



Westchester County Detention Jail, White Plains, N. Y.
Completed in 1931
MORRIS and O'CONNER, 101 Park Ave., New York, Architects



Front of Visiting Booths, Westchester County Jail, White Plains, N. Y.

PAULY JAIL BUILDING COMPANY

INCORPORATED

Designers and Manufacturers of Jail Equipment Since 1856

MAIN OFFICE AND FACTORY

2215 Dekalb Street
ST. LOUIS, MO.

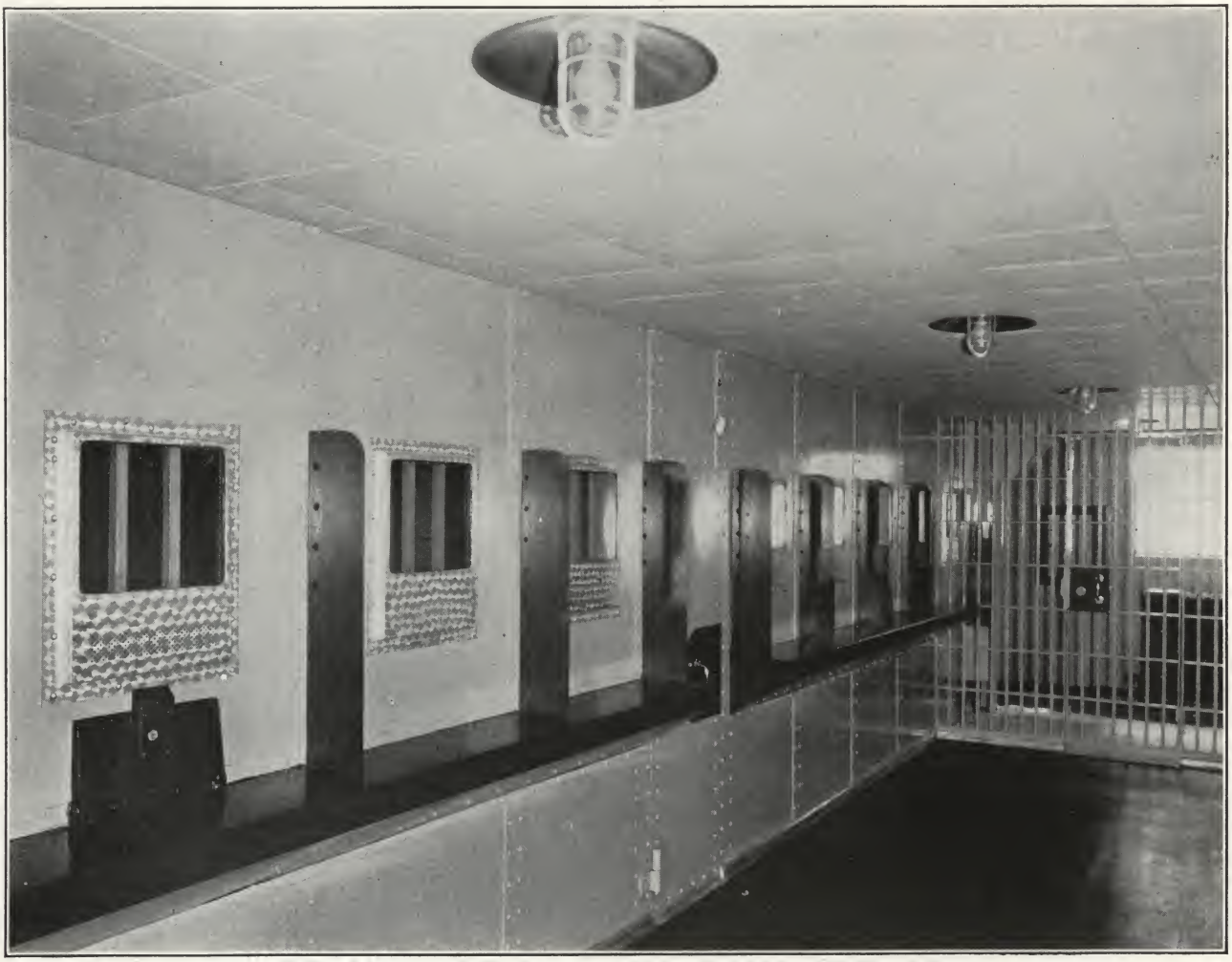
EASTERN OFFICE: 350 Fifth Avenue (Empire State Building), NEW YORK, N. Y.
Telephone: PEnnsylvania 6-5245

76 YEARS OF RESPONSIBLE SERVICE

For seventy-six years Pauly has been rendering responsible, experienced co-operation to architects in the detention building field. During those years, practically every new improvement in detention equipment has been pioneered by Pauly.

The architect, entrusted with the planning of detention buildings, shoulders a tremendous responsibility—staking his reputation against the cunning and prowess of the inmates.

Beginning with the preliminary sketches, we offer him a *helpful, experienced service* that is invaluable—for while a detention building is often an out-of-the-ordinary undertaking to him, to us it is a matter of everyday routine. We offer a *responsible* service, backed by a 76-year successful record, the helpful counsel of a Service Department with trained representatives located throughout the country at convenient points, and an Engineering and Design Service at the Main Office ready at all times to prepare sketches and working plans to best serve your purpose.



Visitors' Consultation Room, Wyandotte County Courthouse, Kansas City, Kan.
WIGHT & WIGHT, Architects

ROANOKE IRON & BRIDGE WORKS, INC.

ROANOKE, VA.



Entrance Doors

Roanoke Products

Manufacturers of TOOL-RESISTING as well as OPEN HEARTH STEEL WORK for Jails, Prisons, Prison Camps, Police Stations and Lock-ups; including Entrance Doors, Grating or Plate Partitions, Cells, Window and Skylight Guards, etc., Keyless Sliding Door Selective Locking Devices, Hinged or Stationary Bunks, Plumbing Niches and other modern Jail Equipment.

For Roanoke Structural and Ornamental Iron work, see Manufacturers' Index.



Entrance Gates



Niche Showing Closet, Lavatory and Ventilator

Experience

For more than a quarter of a century, we have specialized in the design and construction of prison work.

Service

Backed by a wide and successful experience in making layouts and designs in this special class of work, we are prepared to give overnight consulting service and furnish prompt estimates to architects, engineers or officials at points throughout the southeastern states.



Speaking and Observation Panel

Right:
Combination Dayroom and Dining Room

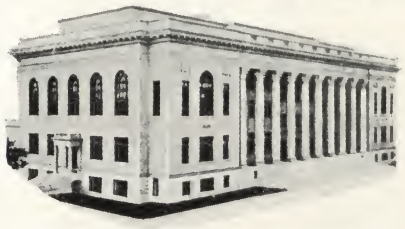




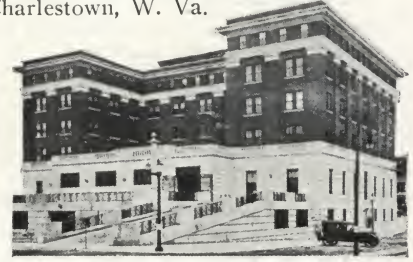
Left:
Call Front and Guards Corridor

Representative Installations

Mecklenburg County Jail, Charlotte, N. C.
Vero City Jail, Vero City, Fla.
Smyth County Jail, Marion, Va.
City Police Department Building, Baltimore, Md.
Greene County Jail, Greeneville, Tenn.
United States Courthouse, Roanoke, Va.
State Penitentiary, Women's Building, Nashville, Tenn.
Jefferson County Jail, Charlestown, W. Va.
District of Columbia Reformatory, Lorton, Va.
Wythe County Jail, Wytheville, Va.
McDowell County Jail, Welch, W. Va.
Floyd County Jail, Prestonburg, Ky.
Twenty-one Prison Camps, State of North Carolina
Pittsylvania County Jail, Chatham, Va.
Boone County Jail, Madison, W. Va.
Jasper County Jail, Ridgeland, S. C.
Tulsa City Jail, Tulsa, Okla.
State Penitentiary, Shop Building, Richmond, Va.
Knoxville City Jail, Knoxville, Tenn.
Cleveland County Jail, Shelby, N. C.



Mecklenburg County Court House, Charlotte, N. C.



Police Department Building, Baltimore, Md.

SOUTHERN PRISON COMPANY

SAN FRANCISCO NEW YORK KANSAS CITY BIRMINGHAM

MAIN OFFICE AND WORKS
SAN ANTONIO, TEXAS
P. O. Drawer 1115

Products

Manufacturers and builders of JAILS and PRISONS, Steel Cells, Sliding Door Selective Locking Systems, Modern Plumbing and Accessories for State, county and municipal purposes, police stations, lockups and hold-overs.

Also Miscellaneous Equipment, Steel Grating, Cell Room Lining, Doors, Window Guards, Bunks, Hammocks, etc.

Service

Representatives in various parts of the country experienced in this special line will call in person on architects, engineers and interested officials and submit free of charge and without obligation, designs, layouts and estimates with samples and models complete, when desired.

Communicate with us.



Wayne County Jail, Detroit, Mich.
AARON H. GOULD & SON, Architects

Experience

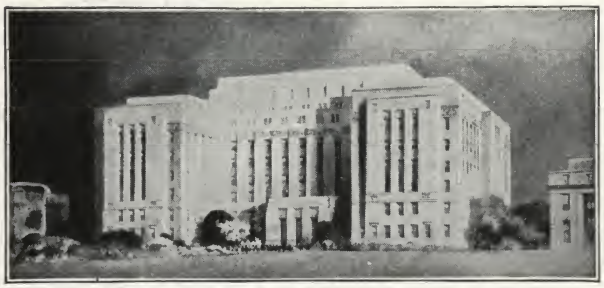
For about forty years the management of this company has been actively engaged in designing layouts; building and equipping jails and prisons, giving special attention to the proper classification of prisoners; perfection of interlocking tool and heat resisting steel cells; selective type, sliding door locking systems; and ventilated niche back, odorless sanitary plumbing fixtures—the most vital features in jail and prison construction.



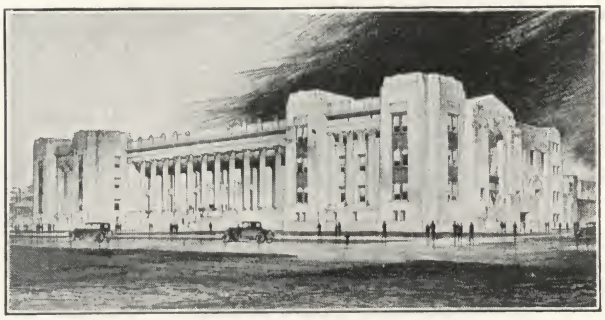
Ventura County Courthouse Annex and Jail, Ventura, Calif.
HAROLD E. BURKET, Architect



Rikers Island Penitentiary, New York, N. Y.
SLOAN & ROBERTSON, Architects



Jefferson County Courthouse and Jail, Birmingham, Ala.
HOLABIRD & ROOT and HARRY B. WHEELOCK, Architects



Criminal Courts and Jail Building, New Orleans, La.
DIBOLL & OWEN, Architects

Representative Installations

Illustrations show a few of our recent representative installations. Other installations include, among many:

Anamosa, Iowa
Woodstock, Va.
Santa Barbara, Calif.
Rawlins, Wyo.
Lowville, N. Y.
Silver City, N. M.
Provo, Utah
Flint, Mich.
McAlester, Okla.
Phoenix, Ariz.
Raiford, Fla.
Texarkana, Ark.
Rikers Island, N. Y.
Norfolk, Mass.
Lyons, Kan.
Lakeport, Calif.
Morrillton, Ark.
Lexington, Neb.
Fort Worth, Tex.
Austin, Tex.
Ventura, Calif.
Tucson, Ariz.
Kankakee, Ill.
Harrisonburg, La.
Jefferson City, Mo.
Greenwood, Miss.
Fordson, Mich.
Roseburg, Ore.

THE STEWART IRON WORKS COMPANY, INCORPORATED

Jail and Prison Builders Since 1886

CINCINNATI, OHIO

Products

STEEL CELLS for penitentiaries, county and city jails.

Hinge and Sliding Type Doors; Locking Devices; Gratings in toolproof, heatproof and bessemer steels; Bunks, Window Guards, Iron Stairways and all modern jail equipment.

For our pages on Fences and Gates, see Manufacturers' Index.

Experience and Facilities

Established in 1886, we have specialized in prison work for nearly a half century. By employing only skilled labor and installing modern machinery we keep abreast of the times in producing first-class jail and prison work.

Our plant contains over 350,000 sq. ft. of floor space. It is equipped with the most modern machinery, jigs and tools of the approved type for the manufacturing of prison work.

Service

We do not compete with architects in making plans for prisons; *we do extend all architects* our complete facilities and experience in designing work when invited to do so.

We solicit correspondence from architects, engineers and municipalities, and will gladly furnish designs, estimates, specifications and layouts to those interested.



Typical Interior View of Steel Cells

Some Principal Installations

United States Penitentiary, Atlanta, Ga.
Virginia State Penitentiary, Richmond, Va.
Kentucky State Penitentiary, Eddyville, Ky.
Colorado State Penitentiary, Canon City, Colo.
Onondaga Penitentiary, Syracuse, N. Y.
Allen County Jail, Fort Wayne, Ind.
St. Lawrence County Jail, Canton, N. Y.
O'Brien County Jail, Primghar, Iowa
Swain County Jail, Bryson, N. C.
Jefferson County Jail, Louisville, Ky.
South Carolina State Penitentiary, Columbia, S. C.
Shelby County Jail, Memphis, Tenn.
Nebraska State Penitentiary, Lincoln, Neb.



Court House Extension, Elizabeth, N. J.
OAKLEY & SON, Architects

Mobile County Jail, Mobile, Ala.
Hamilton County Jail, Cincinnati, Ohio
Dade County Jail, Miami, Fla.
Multnomah County Jail, Portland, Ore.
Oklahoma County Jail, Oklahoma City, Okla.



United States Industrial Reformatory, Chillicothe, Ohio RICHARD FOURCHY, A. I. A. Architect

AMERICAN FILM-SAFE CORPORATION

Manufacturers of Safety Storage Systems for X-Ray Film

1800 Washington Boulevard
BALTIMORE, MD.

THE AMERICAN FILM-SAFE STORAGE SYSTEM FOR X-RAY FILM

Approved and Labeled by
Underwriters' Laboratories, Incorporated
of the National Board of Fire Underwriters

General Description

Purpose—The American Film-Safe Storage System for X-Ray Film is a steel storage cabinet system designed primarily for use in hospitals for the storage of X-Ray film, providing safety features for the protection of films and patients from the fire hazards common to nitro-cellulose film storage.

Advantages

The unit construction of a Film-Safe "stack" or column installation, isolates any spontaneous combustion to the compartment in which such combustion might originate.

Gases generated by combustion are safely vented to the outer air through automatic pressure relief valves located in each film storage compartment unit.

No fire from exterior origin can enter the American Film-Safe. Films are securely filed vertically in automatically and smoothly closing, self-latching drawers which cannot sag, no matter how heavily loaded.

Unit construction permits of great flexibility and attractive appearance in height and width arrangement.

PROTECTION FILM-SAFE PERFECTION

TRADE MARK



An American Film-Safe Installation of Two "Stacks"
Each stack consists of one Type 1202 Hood, three Type 2010 Film-Safe Compartment Units, and one Type 1205 Base

SIZES OF AMERICAN FILM-SAFE UNITS

Style	Height, in.	Width, in.	Depth, in.
2000 Film-Safe	21 7/8	29 1/4	26
2010 Film-Safe	18 1/8	29 1/4	26
1202 Hood	14 5/16	29 1/4	27 1/4
1205 Base	4	29 1/4	26

Constructional Features

Each American Film-Safe "stack," or column installation, consists of one unit base, one or more film storage compartment units and one unit hood, all securely cemented around all edges of intermembering projections to insure leak-proof joints between sections. The number of "stacks" and the compartment units therein are limited only by space available. Each "stack," however, must have its individual unit base and hood. Complete instructions for erecting Film-Safe "stacks" are furnished with each order.

Detailed features of construction are given on the following page, showing a typical installation of two "stacks" of American Film-Safes.

Erecting the Outlet Vent

As it is necessary in the erection of an American Film-Safe that an outlet vent be provided, the specification below is to be followed in the erection of the vent system from the top of the hood to the outer air, or to the smoke stack leading to the outer air.

In installing a Film-Safe System, local fire prevention officials should be consulted as to proper location of and egress of the vent system from the building. After this is determined, the following specifications are to be adhered to for the construction of the vent system. This vent is to be properly supported its entire length or height to meet with the approval of the local building inspector.

Specifications for Erecting Outlet Vent

Vent Pipe Details—The vent shall have a minimum effective sectional area in the ratio of 14 square inches for each 100 pounds of film stored.

All horizonal or vertical vent flues inside of the building which lead to an approved chimney or through the wall of the building to the outer air shall be of 18 U. S. gauge galvanized iron with riveted lock joints, all joints cemented with asbestos cement to insure an airtight job.

Outlet of Vent Pipe—The outlet of each vent shall be above roof of building or to be made to face on a street, court or other clear space remote at least 50 feet to openings. No vent outlet shall be within 25 feet measured horizontally to any exterior fire-escape, nor shall be below any such fire-escape which is within this distance.

Each vent opening directly through an exterior wall shall be protected by a light wire screen not coarser than ⅛-inch mesh.

The end of the vent projecting through walls or above a roof shall be so formed that rain or snow cannot enter it.

Bars or screen designed to prevent burglary must not have a mesh of less than 4 inches and should be located inside the light wire screen and give a net opening not less than the minimum effective sectional area specified above.

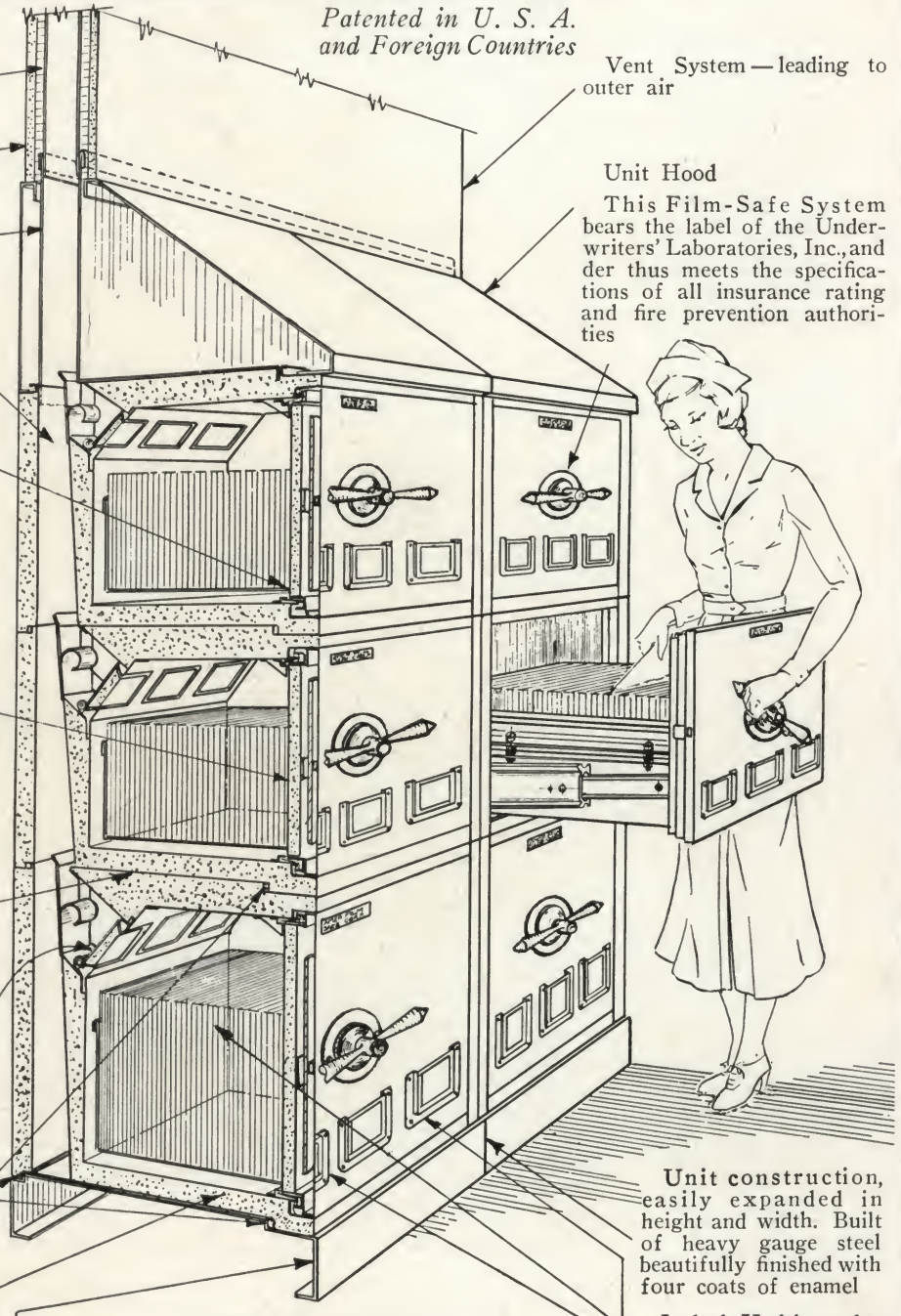
Method of Joining Vent Pipe and Cabinet—The top section of a Film-Safe System has a rectangular extension of the flue of the cabinet to which the vent pipe is to be attached. The end of the vent pipe to be double thickness so that a rigid connection can be made and secured by at least three screws at each side. The joint to contain sufficient asbestos cement to insure an absolutely air tight joint between its members.

Insulation on Vent Pipe—This vent inside the building is to be covered for the entire length with 1 in. of approved heat insulating material. This may be composed of a 1-in. layer of air-cell asbestos securely wired to the vent and then plastered with a covering coat of asbestos or plastic cement to give an even and true surface. After the cement coat is thoroughly dry, the entire surface is to have an outer finishing covering of muslin, which is to be stretched and glued to the plastered surface to give a smooth and acceptable job.

TYPICAL INSTALLATION OF TWO STACKS OF AMERICAN FILM-SAFES

Each Stack consisting of one No. 1220 Hood, one No. 1205 Base, two No. 2010 Film-Safe Units, and one No. 2000 Film-Safe Unit.

Patented in U. S. A. and Foreign Countries



½-in. Asbestos Air Cell Board

½-in. Gypsum Finish

No. 18 Ga. Steel Vent Pipe

Continuous Flue to outer air

Triple Sea Door, 2 seals of sponge rubber, 1 seal of spring bronze

Drawers and doors are mounted on cast iron ball bearing suspensions. The combination of the extremely efficient door seal, and the automatic 4-point latching mechanism (see below) accomplishes an irreducible minimum of gas leakage

Doors are self-closing and latch automatically at four points by means of a roller bearing cam dial and a tripper mechanism

Each compartment is insulated from adjacent compartments and separately vented to outer air

Each section is equipped with five automatic pressure relief valves which lead into general vent system to outer air

"Gaseal" cement to be applied by purchaser around all edges of intermembering projections to insure leakproof joints between sections

Monolithic structure of thermonon, a heat retardent of proven merit, completely surrounds each compartment

Unit Base

Vent System — leading to outer air

Unit Hood

This Film-Safe System bears the label of the Underwriters' Laboratories, Inc., and der thus meets the specifications of all insurance rating and fire prevention authorities

Unit construction, easily expanded in height and width. Built of heavy gauge steel beautifully finished with four coats of enamel

Label-Holders for proper indexing

Each compartment accommodates 100 lbs. of nitro-cellulose film

All hardware has chromium finish

Showing Application of "Gaseal" Cement to Top of Base

Note: See next page for photograph of an actual installation

Approved and Labeled by
Underwriters' Laboratories, Incorporated
of the National Board of Fire Underwriters



Film-Safes Manufactured and Installed by American Film-Safe Corporation in the New United States Department of Commerce Building, Washington, D. C.

YORK AND SAWYER, Architects

CONSOLIDATED ENGINEERING CO., Contractors

The above photograph is a view of an installation of 105 Film-Safe units, 21 Hoods and 21 Bases, installed by the United States Government in the new Department of Commerce Building, Washington, D. C. Government Scientific Authorities, recognizing the fact that water from a vault sprinkler system will not extinguish a film fire, concede the superiority of this system of film storage over that of the vault system from the standpoint of both safety and efficiency, in that the hazard is localized to quantities of one hundred pounds of film.

Film stored as above in unit Film-Safes affords the opportunity for ready and efficient indexing. The above photograph also demonstrates that the vent duct system can be built so as to present a symmetrical architectural effect.

ART METAL CONSTRUCTION COMPANY

GENERAL OFFICES AND FACTORIES

JAMESTOWN, N. Y.

For Branch Offices, see Art Metal Bank Equipment Page

For Art Metal Hollow Metal Doors and Trim, Ornamental Bronze Work, Sectional Metal Office Partitions, Bank, Office and Library Equipment, see Art Metal Construction Company in Manufacturers' Index

ART METAL HOSPITAL EQUIPMENT

Art Metal manufactures a complete line of Hospital Equipment in both Flush and Free Standing Types. (See list below.)

The Flush Type, as illustrated below, is growing in popularity because it has ably proved its worth from the standpoints of sanitation, adaptability and appearance.

TRADE-MARK

Following is a brief summary of the advantages of Art Metal Flush Type Hospital Equipment.

(1) Flush, built-in construction providing bond with tile or plaster at all faces.
(2) Two-piece cabinet design permitting frames to be installed with the building walls.
(3) Finished cabinets to be held until building is broom clean.
(4) Assembly without visible attachments or joints.
(5) Sanitary inside cove construction.
(6) Elimination of dirt pockets.
(7) Facilities for cleaning and dusting.
(8) Acid resisting, baked enamel finish.
(9) No-bolt shelf adjustment.
(10) Nationwide Service Organization.

Flush Type and Free Standing Equipment

Drying Racks
Supply Cabinets
Illuminating and Viewing Cabinets
Utensil Cabinets and Racks
Special Gown Cabinets
Toy Cabinets
Steam Dryers
Suction and Pressure Gauge Cabinets
Solution Warming Cabinets
Instrument Cabinets
Titration Tables
Bed Pan Racks
Dressers
Rubber Sheet Cabinets
Shelving
Towel Warmers
Blanket Warmers
Drying Racks and Cabinets
X-Ray Viewing Cabinets
Fire Extinguisher Cabinets
Narcotic Cases
Ether Cabinets
Medicine Cases
Kitchen Equipments, including:
Monel Metal Sinks
Drain Boards
Cabinets



Modern Metal Equipment



Medical Case in Typical Service Room



A Well Planned Assembly of Shelves with Doors, Drawers and Cabinets



Hollow Metal Counters

BUCK X-OGRAPH COMPANY

Manufacturers of X-ray Darkroom Equipment

8701 to 8715 Xograph Avenue
ST. LOUIS, MO.

Products

DEVELOPING TANKS. VENTILATORS.
FILM DRYERS. ILLUMINATORS, etc.
DARKROOM LIGHTS. TRANSFER CABINETS.

Prominent Hospital Installations

T. B. League Hospital, Pittsburgh, Pa.
De Paul Hospital, St. Louis, Mo.
Osteopathic Hospital, Philadelphia, Pa.
Duke University Hospital, Durham, N. C.
Doctors' Hospital, New York, N. Y.
Barnes Hospital, St. Louis, Mo.
St. Luke's Hospital, New York, N. Y.
Albert M. Billings Memorial Hospital, Chicago, Ill.
City Hospital, St. Louis, Mo.
Children's Hospital, Boston, Mass.
Massachusetts General Hospital, Boston, Mass.

Engineering Staff

Send us the floor plan and required capacity (number of films to be processed per day) and we will submit a layout.

Blue prints and complete descriptions of our equipment for a completely and efficiently laid out darkroom supplied on request. The fact that we are familiar with modern hospital conditions and requirements makes our recommendations of great value to architects.

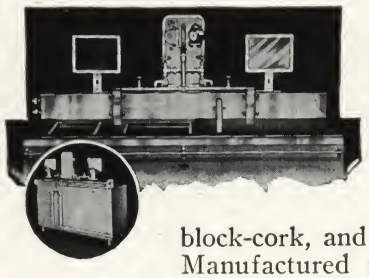


Children's Homeopathic Hospital, Philadelphia, Pa. | De Paul Hospital, St. Louis, Mo. | Doctors' Hospital, New York, N. Y.

Scope of Service

We have made a special study of X-ray darkroom requirements. Our experience in designing and equipping should prove of value to architects.

SOME STANDARD EQUIPMENT

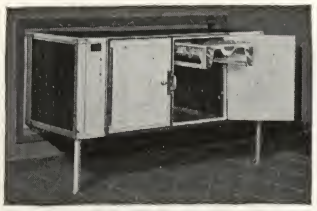


Thermonel Developing Tanks

Designed for controlling the temperature of the developing solutions. Built of tidewater cypress, insulated with 2 in. of block-cork, and lined with Monel metal. Manufactured in three standard sizes. Special tanks built to order.

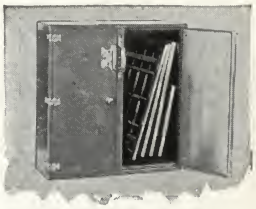
Buck Film Dryers

These have become a necessity to every X-ray darkroom. Not only hasten the drying of films, but promote order and efficiency. They are manufactured in three models, both double and single. Special models of extra large size built to order.



In the Wall Model (I.W.) Opens Both Sides

Buck Transfer Cabinet



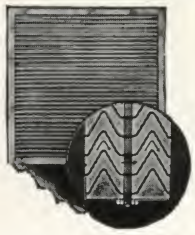
This cabinet mounted in the darkroom wall. For storing exposed and unexposed cassettes in a manner convenient to both darkroom and radiographic room. Saves many extra steps. Exterior of seasoned birch, lined with $\frac{1}{16}$-in. sheet lead protected by galvanized iron. Automatic locks on doors. Nickel trimmings. Made in one size only.



Double Deck Side Opening Model (S.O.) Opens One Side Only

When designing the darkroom it is very important a free circulation of air be supplied to the film dryer by use of a maze entrance or ventilator of correct capacity. Damp air from the film dryer must be conducted from the darkroom.

Buck Darkroom Ventilator

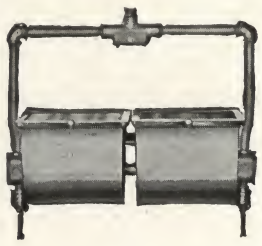


The Buck Ventilator admits air to the darkroom without admitting light.

A necessity for supplying air to a film dryer as well as general darkroom ventilation. Size, 24x24x3 in. thick. Weight, 35 lbs. Supplies sufficient air for a single deck film dryer.

Buck Indirect Darkroom Ceiling Lamp

For general darkroom illumination. Delivers both ruby and white light. Has twin bowls of cast aluminum. Glass size of each bowl, 8x10 in. Enclosed wiring. All parts aluminum finish. Very substantial and practical. Made in one size only.



CASTLE HOSPITAL STERILIZERS

Sterilizing Equipment for Hospitals, Industrial Plants and Professional Buildings

WILMOT CASTLE COMPANY
1231 University Avenue, ROCHESTER, N. Y.

Products

A complete line of HOSPITAL STERILIZING EQUIPMENT, Electric or Direct Boiler Steam Operated.

Also Bacteriological Apparatus and Hospital Sanitation Specialties.

The Organization

For almost fifty years Castle sterilizing and bacteriological apparatus has been used in hospitals throughout the country. The highly efficient, up-to-the-minute plans of Castle's recommended installations, either for single units, for complete hospital equipments, fulfill all requirements of National, State and Municipal health boards.

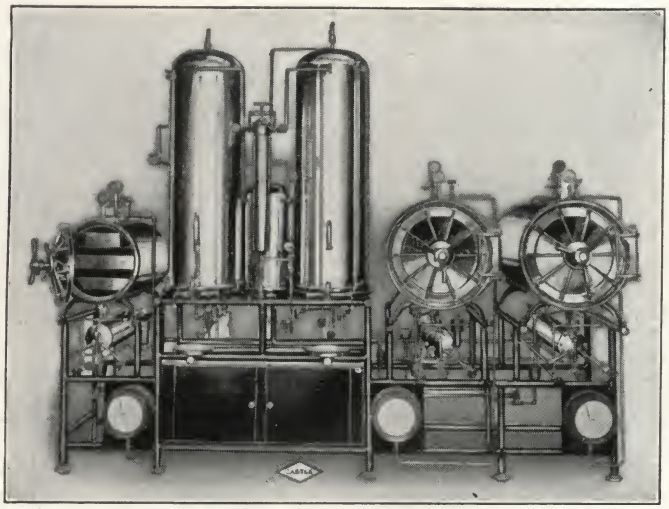
Assistance to Architects

Our engineering staff can be of timely assistance to architects when planning the layout of sterilizing equipment to meet the specific hospital requirements.

There are so many factors which govern the efficiency of such an installation that it is almost imperative that competent counsel be obtained on the sterilizing equipment before plumbing specifications are made. The service which Castle Engineers can give will prove invaluable on such matters as arrangement and selection of sterilizer units, method of heating, pre-determination of roughing-in, venting and trapping and method of heat.

Write the Castle Company. Engineering advice is given without obligation.

CASTLE



Steam Heated "Battery" Mounted in Sterilizer Room of Mercy Hospital, Buffalo, N. Y.

Consists of: two large pressure dressing sterilizers, one pressure instrument sterilizer, each with recording gauge; and pair of pressure water sterilizers with blanket warmer.

Castle Sterilizers

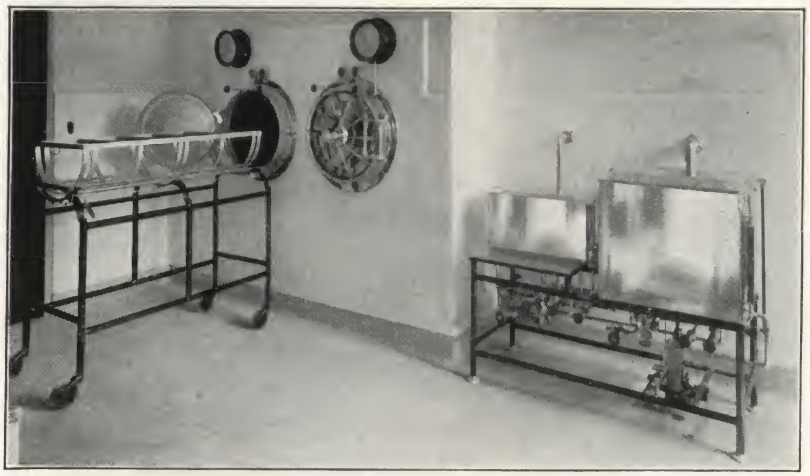
Dressing Sterilizers
Instrument Sterilizers
Electric Instrument Sterilizers
Water Sterilizers
Utensil Sterilizers
Stills
Bed Pan Sterilizers
Bed Pan Washers
Blanket Warmers
Solution Warmers
Autoclaves
Disinfectors
Baths
Incubators and other Bacteriological Apparatus

All of these are made by the WILMOT CASTLE COMPANY. They are made and sold individually or as a complete hospital installation. Groups of units for one room are usually mounted together "in battery". A battery may be combined floor stand, on wall brackets, or recessed behind a tile wall.

Castle Sterilizers have always been built up to a standard of service rather than to meet a price. They reflect this in the universal satisfaction they give.

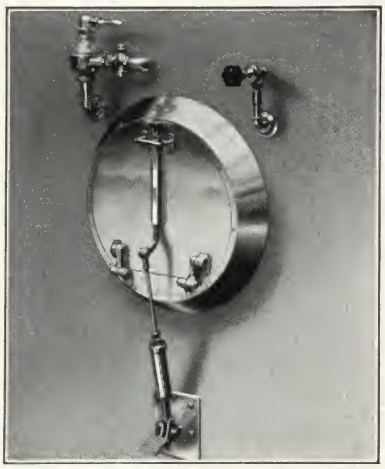
Recent large hospital installations include:

Falk Clinic (University of Pittsburgh).
Springfield Hospital, Springfield, Mass.
Hartford Hospital, Hartford, Conn.
St. Luke's Hospital, Montreal, Can.
Montreal General Hospital, Montreal, Can.
Municipal Hospital, Hartford, Conn.
Allegheny General Hospital, Pittsburgh, Pa.
Mercy Hospital, Auburn, N. Y.
Windham Comm., Willimantic, Conn.
Copley Hospital, Aurora, Ill.
Park Lane Hospital, Salinas, Calif.
State Veterans Hospital, Yountville, Calif.
Fitzgerald Mercy Hospital, Philadelphia, Pa.



In Syracuse Memorial Hospital, Syracuse, N. Y.

Battery of steam heated dressing sterilizer, recessed in tile wall. (Note all valves pass through cast bronze finishing collar); also open battery of instrument and utensil sterilizers.



"Regal" Bed Pan Washer and Sterilizer

The last word in recessed equipment for washing and sterilizing bed pans

THE GENERAL FIREPROOFING CO.

Metal Case and Cabinet Work for Hospitals and Laboratories Library Bookstacks, Selling Fixtures for Department Stores

YOUNGSTOWN, OHIO

Products

BUILT-IN METAL CASE and CABINET WORK for hospitals and laboratories, including Instrument Cases, Utility Room Cupboards, Blanket Warmers, Bed Pan Warmers, Splint Cases, Plaster Cases, China Cupboards, Wardrobes, X-Ray Viewing Cabinets, X-Ray Film Safety Cabinets, Laboratory Desks and Tables, and Steel Storage Shelving; Special Work in Monel Metal.

Also Portable Equipment, including Steel Desks for Offices and Nurses' Stations, Aluminum Chairs, Filing Cabinets, Waste Baskets, Office Safes, Card Index Cabinets, Counter Files, Storage Cabinets.

Service

Thirty years' experience in the building of steel equipment for hospitals, laboratories, libraries, offices, banks, courthouses. Complete Engineering Service. One of the best equipped metal fabricating plants in the industry. Staff of hospital equipment specialists in fifteen branch cities.

GF Built-in Equipment

Types of Construction—GF Metal Hospital Built-in Equipment can be either of the strictly built-to-order type or of standardized or semi-standardized units which have been developed out of our long experience in serving a large number of hospitals. The use of standardized construction always results in measurable savings and should be used wherever possible.

GF Metal Case Work is of two distinct types, the Overlap Plaster Flange Type and the Steel Buck Type.

Overlap Plaster Flange Type—Attached to wood bucks installed by the building contractor and the steel case is installed in the opening after plastering.

Steel Buck Type—Employs the use of a steel frame into which the finished case fits exactly. The buck is delivered to the building in advance of the finished cabinet, and is installed by the building contractor. Later the cabinet is slipped into place and permanently attached to the steel buck.

This method enables the fabrication of the cabinet work to proceed simultaneously with the construction of the building. It avoids confusion among groups of workmen and entirely eliminates all chance of costly errors and saves time.

Finish—All equipment finished in hard, oven-baked enamel in color to suit decorative scheme.

Data and Specifications

A comprehensive set of drawings of installations and complete specifications is available to interested architects, hospital and laboratory officials.



Instrument and Sterile Supply Cases



Milk Laboratory Supply Cases. Monel Metal Ledge



Nurses' Desk, Supply and Narcotic Cases

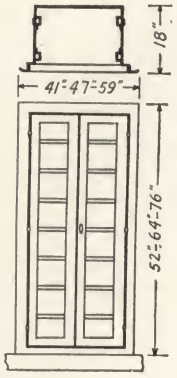


X-Ray Viewing Cabinets

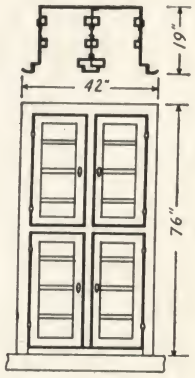


Instrument Cases

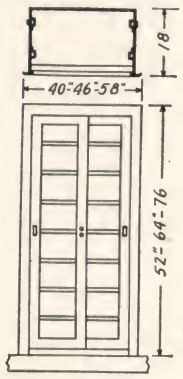
TYPICAL GF METAL HOSPITAL CABINETS



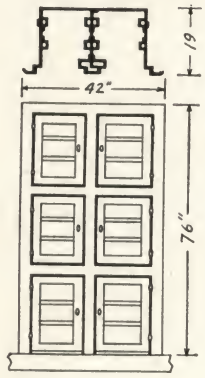
Instrument Case Type A-A
Glass doors, glass shelves. Lock handle and hinges chromium plated.



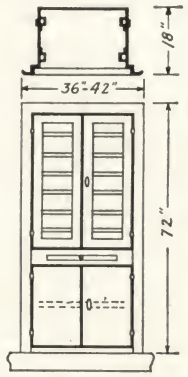
Instrument Case Type A
Glass door, plate glass shelves. Hinges and lock handle chromium plated. Four Monel Metal trays on channel suspensions optional.



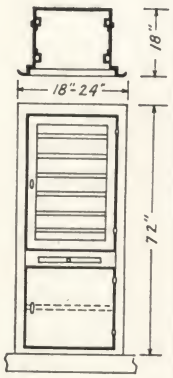
Instrument Case Type C-C
Sliding glass doors with lock. Chromium plated, sunken handles. Plate glass shelves.



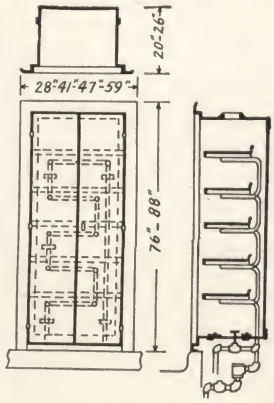
Instrument Case Type C
Six glass doors, plate glass shelves. Hinges and lock handles chromium plated. Six Monel Metal trays on channel suspensions optional.



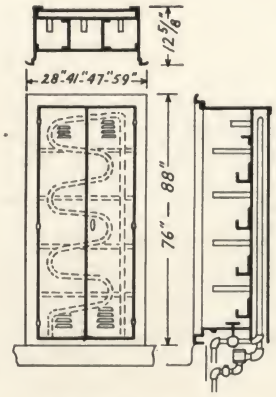
Instrument Case Type E
Glass doors at top, steel doors at bottom. Glass shelves in upper section. Chromium plated lock handles and hinges. Monel Metal sliding shelf between sections.



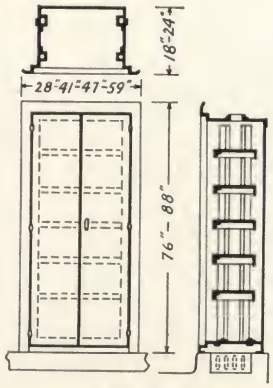
Instrument Case Type F
Glass door at top, steel door below. Plate glass shelves in upper section. Chromium plated hinges and lock handles. Monel Metal sliding shelf between sections.



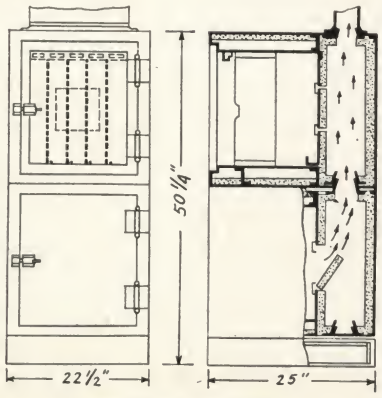
Blanket Warmer Type A
Steel door with chromium plated lock handle and hinges. Perforated steel shelves. Heating coil of seamless copper pipe and fittings. Vent in top.



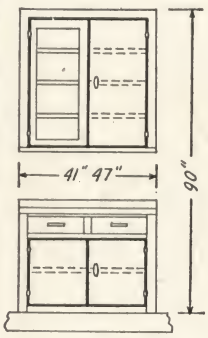
Bed Pan Warmer Type A
Steel doors with chromium plated lock handle and hinges. Holders for bed pans, urinals and enema irrigators. Heating coil of seamless copper pipe with fittings. Door ventilated at top and bottom.

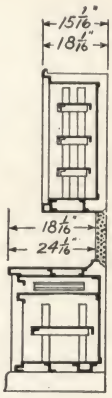


Blanket Warmer Type C
Steel door with chromium plated lock handles and hinges. Perforated steel shelves. Provision in base for installation of electric heating coils. Vent in top.

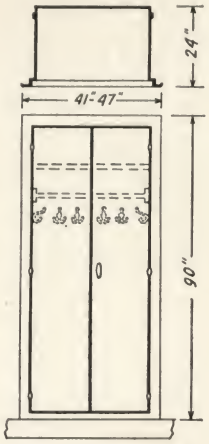


X-Ray Safety Film Cabinet
Two cabinets shown, each with asbestos lined walls. Vertical partitions in each cabinet for supporting envelopes containing films. Door equipped with spring hinges and spring lever catch. One-way trap door in back opens under pressure of gasses into flue. Capacity each cabinet, 250 pounds of films.

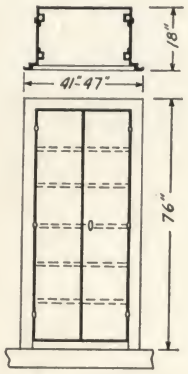




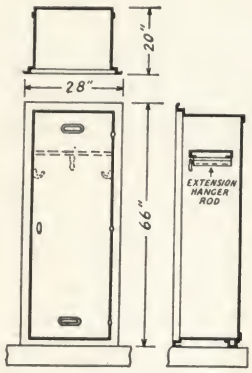
Utility Case Type A
Glass or steel doors in upper section with chromium plated lock handle and hinges. Steel shelves in both sections. Lower section has Monel Metal top and two storage drawers on channel suspensions.



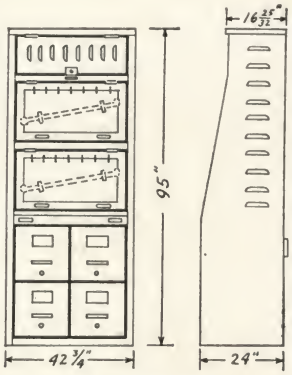
Splint Cabinet Type A
Steel doors with chromium plated lock handles and hinges. Monel Metal shelf and rod at top. Six Monel Metal three-prong hooks.



Storage Cabinet Type A
Steel door with chromium plated lock handles and hinges. Steel or Monel Metal Shelves.



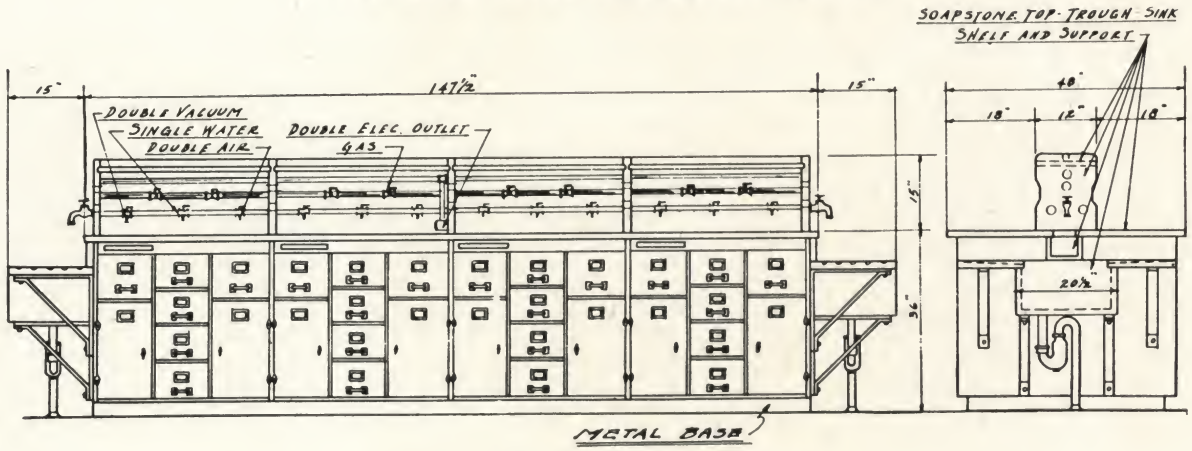
Wardrobe Type A
Steel door with chromium plated lock handle and hinges. Steel shelf at top with extension coat hanger. Two double-prong hooks. Vent in door at top and bottom.



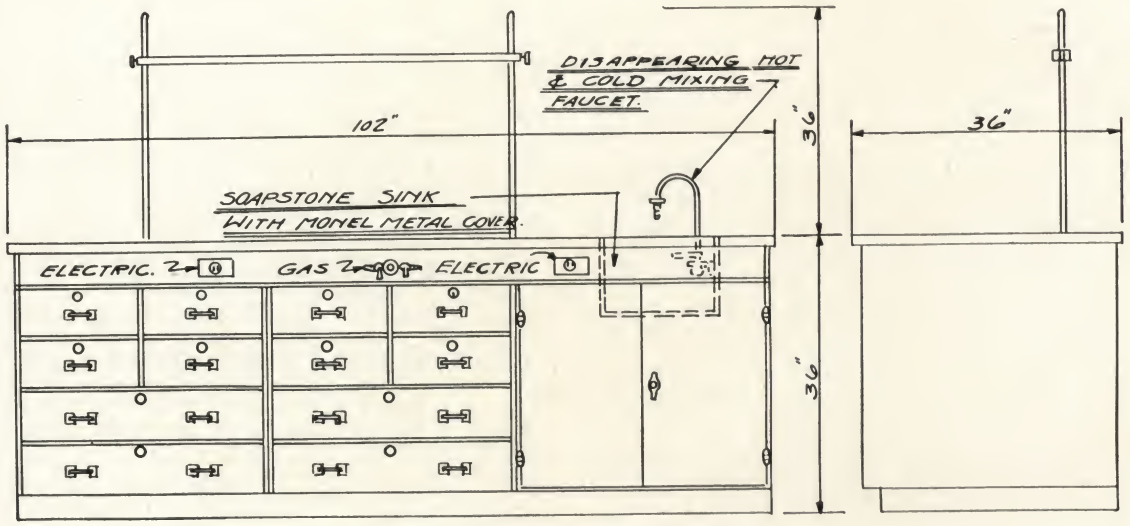
X-Ray Viewing Cabinet
Equipped with four file drawers on roller suspensions and two hinged plate glass viewing panels with spring clips for holding films and attachments for Cooper-Hewitt tubes. Compartment in top with louvered door for tube auxiliary. Sides and rear of cabinet ventilated.

Above are shown single cabinets only. Multiple cabinets of any number of units will be built. All cabinets shown, excepting X-Ray Film Cabinets, are also furnished with cove corners of ¾-in. radius.

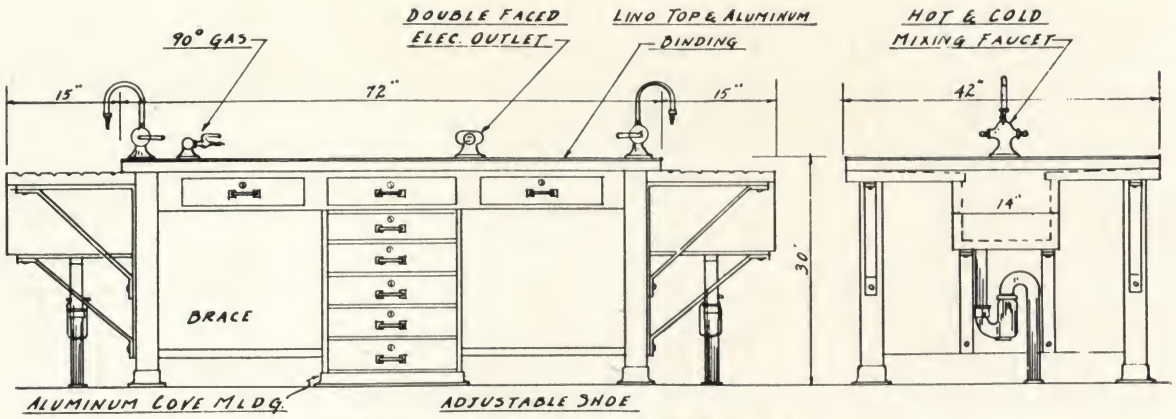
TYPICAL GF METAL LABORATORY TABLES



Chemistry Table—Double Faced—No. LE-C8



Physics Instructor's Desk—No. LE-P6



Biology Table—Double Faced Type—No. LE-B8

Over sixty different types of desks, tables and cabinets for Chemistry, Biology and Medical Laboratories are shown in our Metal Equipment Catalogue. Copy on request.

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Monel Metal and Nickel and Allied Products

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For Sources of Supply, see our page on Metals

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MONEL METAL—available from stocks conveniently located throughout the country and made in all commercial forms required by manufacturers of hospital equipment. (See Manufacturers' Index, our section on Metals, for commercial forms and location of warehouses.) All necessary accessories, such as nuts, bolts, screws, rivets, etc., are also available.

INCO MONEL METAL TRADE-MARK

Monel Metal

Monel Metal is a registered trade-mark applied to an alloy containing approximately two-thirds nickel and one-third copper. Monel Metal is mined, smelted, refined, rolled and marketed solely by International Nickel.

Advantages of Monel Metal for Hospital Equipment

(1) Absolutely rustproof.

(2) Resists corrosion by hospital solutions as well as fruit juices and fruit acids.

(3) Strong as steel; tougher than steel.

(4) Easy to clean; therefore sanitary.

(5) Beautiful appearance; has color of platinum.

(6) Durable — proven by over 20 years of service.

(7) Easily fabricated.









Proven Uses of Monel Metal

Metal cabinets should be of all Monel Metal construction where extreme durability and appearance are important factors. Enameled steel construction also is used with the following parts of Monel Metal:

Counter tops	Trim
Shelving	Base kick-plates

For over 20 years Monel Metal has been used in food service and clinical equipment. Many installations have been in actual service for over 15 years, and are functioning perfectly. The Monel Metal page in the Food Service Equipment section contains a list of the more prominent installations illustrative of the lifetime quality of Monel Metal equipment.

Services

Architects and engineers are invited to make use of the extensive advisory service maintained by this organization. A call to any of our sales offices, listed in our section on Metals, will bring you a Monel Metal specialist. The co-operation of the Monel Metal specialists can contribute materially in the application of metals to hospital equipment.

Available Publications

To assist architects and engineers to form a clearer conception of the possibilities for the application of Monel Metal to built-in cabinets, THE INTERNATIONAL NICKEL COMPANY, INC., has prepared a series of reference folders and booklets, available on request:

"Architects' Handbook of Metal Cabinet Equipment"—A reference book prepared for the profession. Contains complete information on the design and construction of metal cabinets, choice of materials of construction, and illustrations of correct method of writing specifications. Also contains catalogue pages of many manufacturers of cabinets.

"Christ Hospital," Cincinnati, Ohio—Booklet describing its food service, clinical and laundry equipment.

"And the Greatest of These"—The uses of Monel Metal in The Medical Center, New York, N. Y.

A series of illustrated folders on

Utensils	Clinical Furniture
Cabinets	Laundry

"Modern Hospital Equipment"—Latest annual edition covering the use of Monel Metal in all departments of the hospital.

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Product

THE STEELCRETE SYSTEM BANK VAULT CONSTRUCTION.

For Steelcrete Concrete Reinforcing Mesh, Industrial Mesh, and Framing Accessories for open mesh partitions, window guards, etc., see Manufacturers' Index.

Steelcrete 5-Point Protection

The Steelcrete System of bank vault protection consists of an orderly arrangement of thousands of stands of steel, thoroughly embedded in concrete, producing a network of entanglement that effectually resists cutting flame, drill, explosives, fire and falling loads.

In this entanglement of steel and concrete 5 points of protection are provided:

Point 1—Drills fail to penetrate.

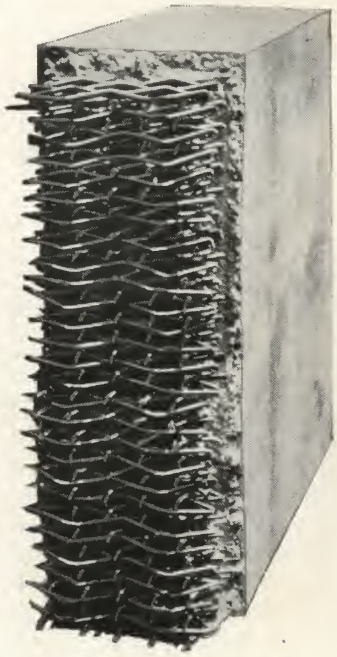
Point 2—The cutting flame is helpless against concrete.

Point 3—Explosives lose their force in absorption by the thousands of steel strands.

Point 4—The thickness of the wall, ceiling and floor slabs minimizes the transmission of heat from the exterior to contents of the vault.

Point 5—Great structural strength successfully withstands impact of falling girders, heavy safes and other loads resulting from devastating fires.

As bank vault protection, the Steelcrete System presents such an impregnable barrier against attack and destruction that it has been selected by financial institutions of every kind in America and several foreign countries.



Section of Steelcrete Bank Vault

Placed either horizontally or vertically, Steelcrete forms a thick entanglement of steel that is proof within all practical limits against torch, drill, shock, fire and explosives. Concrete is poured through and around the steel matrix to form a wall of great structural strength

Great Structural Strength

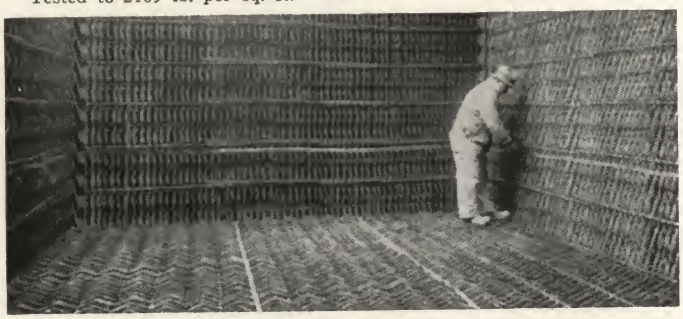
The tremendous structural strength of a Steelcrete Vault Roof Slab was recently brought out in a series of tests, when a slab having a total depth of 18 in. carried a load of more than 1 ton per sq. ft. on a span of 30 ft. Tests conducted under the direction of the architects of the Federal Reserve Board have shown that a steel entanglement properly embedded in concrete constitutes the strongest and the most economical protection against attack. As a result of such tests the Steelcrete System was installed in the New York Federal Reserve Bank.

SAFE SUPERIMPOSED LOAD CARRYING CAPACITIES OF STEELCRETE VAULTS FOR VARIOUS THICKNESSES OF ROOF SLABS

Total thickness, inches		Load in pounds per square foot			
Roof slabs	Steelcrete mats	Span 15 feet	Span 20 feet	Span 25 feet	Span 30 feet
18	16	2125	1095	621	*363
24	20	3320	1725	988	584
36	32	6544	3464	2034	1257

The figures above represent safe loads determined from accepted formulas used in design of reinforced concrete, providing for a factor of safety of 4, together with standard assumption of values for steel and concrete. Loads governing ultimate failure of slab would represent values four to six times the above given loads.

*Tested to 2169 lb. per sq. ft.



Easily Erected by Any Skilled Contractor

The simplicity of the Steelcrete System makes it possible for any skilled contractor to successfully handle the erection. Working drawings making for rapid field erection are furnished by the manufacturers for each installation and the field engineers of the manufacturers keep in constant touch with the work, insuring an entirely satisfactory installation.

Estimates

The manufacturer, on request, will submit complete estimates upon the use of the Steelcrete System in any type or size of bank vault.



DRILL PROOF



TORCH PROOF



BLAST PROOF



FIRE PROOF



SHOCK PROOF

DIEBOLD

TRIUMPH LINE
FIRE-RESISTIVE

VAULT DOORS

MANUFACTURERS OF

Bank and Safe Deposit Vaults and Vault Doors, Safe Deposit Boxes, Vault Linings and complete equipment; Fire-resistive Safes and Vault Doors; Cashgard Chests.

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Over Seventy Years of Successful Safe Building

The recognized quality of Diebold Products is the result of experience as designers, engineers and manufacturers of bank vaults and safes since 1859.

During this period many Diebold Safes and Vaults have successfully withstood the severest tests in actual service, as is attested by the many letters in our files.

Co-operative Service to Architects

Our Engineering Department, together with the entire personnel of our various branch offices, is at the disposal of the architect or contractor.

Sketches and estimates on special work, as well as stock designs, will be gladly furnished, without charge.

THE TRIUMPH LINE OF VAULT DOORS

Development of the Triumph Line

Independent tests made by the Underwriters' Laboratories, Inc., published in their Report SP-1.669 on November 30, 1927, on an uninsulated steel plate vault door proved conclusively the need of doors affording much greater protection in this class. The door tested was typical of the old style plate door construction. The old style plate door failed the test at the end of 27½ minutes when the temperature inside the vault reached 300°—and it was fully grouted in the opening and the inside doors closed. With the inside doors open it was found that it would have stood the test only 10 minutes.

The Underwriters reported that the old style plate door offered uncertain protection because proper grouting of door and closing of inside doors could not be guaranteed in actual practice.

Quick to appreciate the need of vault doors offering reliable protection our engineers in conjunction with tests in the Underwriters' Laboratories, Inc., developed the Diebold Triumph Line of Fire-Resistive Vault Doors. The line includes doors offering a minimum of from 29 minutes to 6 hours resistance, based on Underwriters' tests. None of them require inside doors. All of them, except No. 156 (6-hour Label Door), are designed to eliminate a complete grout in installation.

Our engineers discovered that the weakness of the old style door lay in its construction. When exposed to intense heat the buckling and warping of the exposed surfaces opened direct passages into the vault for the entrance of heat and flame. This weakness was overcome in the Triumph Line. Comparatively light gauge metal is used for the outer door plate and frame—the surfaces exposed to intense heat. Heavy gauge formed "Z" bars and other members reinforce the outer door plate and frame from the inside, reducing the strains of buckling and warping of the exposed surfaces. It is this principle of construction that prevents buckling and warping of the exposed outer surfaces of the doors from opening direct passages into the vault. Tongues and grooves on the insulated doors, and box tongues with overlapping plates on the light doors assist in preventing openings into vault.

The Triumph Line

The Diebold Triumph Line Vault Doors include doors both with and without the Underwriters' labels. Protection is offered for every average risk. This line of doors is shown with full particulars in the following pages.

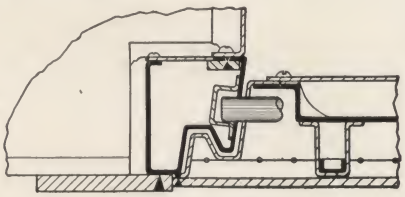
Tests—All of the Triumph Line Doors, with the exception of the Nos. 215 and 235 Burglar-resistive Doors, have been tested in the following manner: The door is placed in a masonry wall the same as in actual practice and the heat applied for the length of time determined by the classification. A second test is made by heating the door in the furnace for one-half the endurance period. It is removed from the furnace and while in heated condition subjected to a standard fire hose stream under pressure. The door is then reheated in the furnace for the remainder of endurance period.

The Diebold Triumph Line Vault Doors have withstood these tests and have proved that they prevent the direct entrance of heat and flame into the vault. Be sure your vault is equipped with a door that offers certified protection in the degree suited to your risk.

Construction—Triumph Line Vault Doors are constructed entirely by the electric welding process. Screws are used to attach removable parts only.

Tests as conclusive as those that have proved the electric welded joint superior to rivets in skyscraper and bridge construction have proved it more suitable for vault door construction.

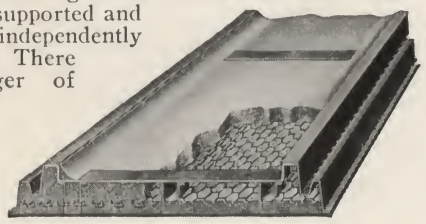
The Patented Off-set Jamb—The No. 152 Triumph Line Door has a patented off-set jamb construction. This is the first two-hour Underwriters' label vault door that eliminated the usual installation difficulties. The off-set built into the masonry opening is covered with a point grout of mortar applied quickly with a trowel. The door is easily set and adjusted in the opening without further trouble.



Off-set Jamb

Reinforced Insulation—The illustration below shows the method of reinforcing the insulation of Diebold Triumph Line Insulated Vault Doors.

Three heavy horizontal cross braces behind the insulation, and attached to the jambs, carry the vertical "U" bars in straps over which a heavy reinforcing cross wire mesh is laid. The vertical "U" bars extend the full height of the door and the reinforcing mesh covers the entire surface. The insulation is supported and reinforced entirely independently of the outer door plate. There is no possible danger of the outer door plate damaging the insulation when it warps and buckles because of exposure to intense heat—it cannot pull the insulation from the jambs.

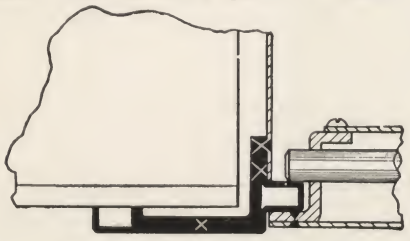


Insulation Reinforcing

Anti-warp Channel—The light-weight doors, "R," "S," "T," "Tile" and "L" are constructed with the anti-warp channel illustrated at the right.

This channel is formed from a solid piece of heavy gauge metal and attached to the sides of the vestibule on the front of the door back of the front frame.

At all times this anti-warp channel maintains constant contact with the face of the wall, preventing the direct passage of heat and flame into the vault.



One-piece Anti-warp Channel

Locks—The lock used on all the Triumph Line Vault Doors is the Diebold No. 900 3-tumbler, key-changing combination lock. The lock is equipped with a patented re-locking device. It is capable of millions of changes of combination.

Installation—Triumph Line Vault Doors are built with a removable back frame attached with screws to the vestibule body. The back frame is removed, the door set in the opening and leveled, and the frame drawn to the wall with the screws.

GENERAL RECOMMENDATIONS FOR FIRE-RESISTIVE VAULT CONSTRUCTION

The following recommendations will in a general way be helpful in the construction of fire-resistive vaults. They are general in nature since the individual conditions that surround the building of every vault cannot be foreseen.

Before the vault is built, the services of a competent architect or contractor should be secured to determine the degree of protection required, to make the proper allowances for floor strength, to determine the structural strength required of the vault in relation to the whole structure and to arrange for the proper footings for the vault.

Material for Vault

Solid wall construction is recommended for vaults where the maximum resistance to heat is required. Solid walls offer more resistance to the impact of falling bodies such as machinery, safes and fixtures.

These factors are of vital importance in considering the type of vault to be built. In case of a severe fire the vault must be structurally strong to withstand the shock of falling bodies.

Concrete, on account of its monolithic character, is admirably suited for vault construction. Brick masonry can also be laid so as to be practically monolithic in character. If it is carefully laid in this manner, it may be successfully used for vault construction. From structural considerations, steel frame work is advisable when vaults are built more than a few stories high.

Structural Independence

The vault walls should be structurally independent of the building wherever possible. If connected in any manner, the connection should be so made that in the event of the collapse of the building, the building members may move or fall without affecting the stability or fire-resistive qualities of the vault. In fire-resistive vault construction, provision should be made for expansion of the interior building members since severe thrust may be exerted on the vault structure.

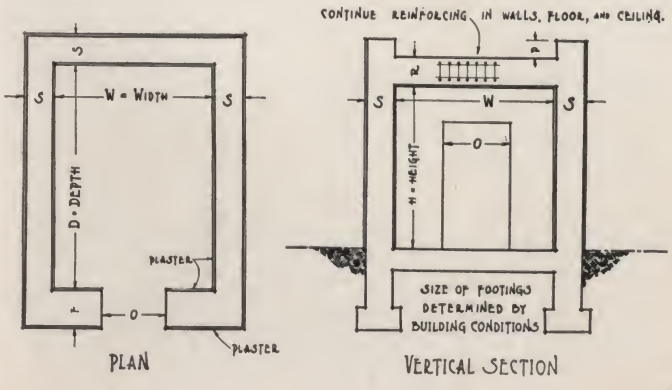
Where building members join those of the vault, they shall project into the vault not more than 4 ins. and in no case should the wall thickness be less than 8 ins. at these points. All beams or bearing members adjoining the vault should be designed to release freely in event of failure. Where the outside walls of the building are used to serve as a portion of the vault wall, the vault walls should be effectively bonded to the building wall.

Plan of Vault

At the bottom of this page are shown vertical and horizontal sections through model fire-resistive vaults with dimension lines indicated by letters. The following paragraphs will explain them in detail:

"W" Width of Vault—The maximum width should not exceed 10 ft. When a greater width than 10 ft. is required, interior columns, girders or division walls should be used.

"D" Depth of Vault—The inside depth of the vault is optional.



"O" Masonry Opening for Vault Door—The actual dimensions are determined by the door used.

"H" Height of Vault—The inside height of the vault should not exceed 11 ft.

Wall and Roof Thickness

"S" Vault Wall Thickness—The wall thickness of structure supported vaults, that is vaults supported by the framework of buildings of fire-resistive construction, shall be as follows:

For vaults requiring six hours or more heat resistance—

(1) Reinforced concrete 10 ins.

(2) Brick or plain concrete 12 ins.

(3) Protected steel or reinforced concrete frame with reinforced concrete panels 10 ins.; brick or plain concrete panels 12 ins.

For vaults requiring two hours heat resistance—

(1) Reinforced concrete 6 ins.

(2) Plain brick 8 ins.

(3) Hollow clay tile or concrete block 12 ins.

(4) Protected steel or reinforced concrete frame with reinforced concrete panels 6 ins.; brick or plain concrete panels 8 ins.; hollow clay tile or concrete block panel 12 ins.

The wall thickness for ground supported vaults, that is, vaults supported directly on the ground and independently of the building in which they are located, should be constructed in accordance with the following table:

MINIMUM WALL THICKNESSES—GROUND SUPPORTED VAULTS

Six-hour Vaults					Two-hour Vaults					
	Kind of wall construction					Kind of wall construction				
			Protected steel or reinforced concrete frames						Protected steel or reinforced concrete frames	
Number of stories counting from top down	Reinforced concrete, in.	Brick or plain concrete, in.	Reinforced concrete panels, in.	Brick or plain concrete panels, in.	Number of stories counting from top down	Reinforced concrete, in.	Brick, in.	Hollow clay tile or concrete block, in.	Reinforced concrete panels, in.	Brick or plain concrete panels, in.	Hollow clay tile or concrete block panels, in.
Top	10	12	10	12	Top	6	8	12	6	8	12
2nd	10	12	10	12	2nd	8	12	12	8	12	12
3rd	10	12	10	12	3rd	10	12	16	10	12	16
4th	12	16	10	12	4th	10	16	20	10	12	16
5th	12	16	12	16	5th	12	16	.....	12	16	20
6th	12	20	12	16	6th	12	16	.....	12	16	20
7th	.....	.....	12	16	7th	.....	.....	.....	12	16	20
8th	.....	.....	12	16	8th	.....	.....	.....	12	16	20
9th	.....	.....	12	16	9th	.....	.....	.....	12	16	20
10th	.....	.....	14	16	10th	.....	.....	.....	12	16	20

"F" Thickness of Front Walls—The thickness of the front wall, at the point allowed for the opening of the vault door, is determined by the door used.

"R" Roof of Vault—The roof should be at least 8 ins. thick of reinforced concrete or protected structural steel with reinforced concrete slab or filler of adequate strength and fire resistance.

The roof should be designed for a live load of at least 350 lbs. per sq. ft. to take all of impact loading. Where local conditions are especially severe, loads of from 500 to 1000 lbs. per sq. ft. should be provided for.

"P" Parapet—If the roof of the vault is more than 12 ins. below the roof of the building, the vault walls should be parapeted at least 12 ins. above the vault roof and the space thus formed filled with sand, gypsum or similar material, to act as a cushion against impact from falling materials and also to serve as further insulation against accumulation of burning debris on the vault roof.

Adequate drainage shall be provided for this space above the roof.

RECOMMENDED RECORD ROOM CONSTRUCTION

The record room must have no other opening than the one protected by a record room door. No wood or other combustible material should be used in the construction of a record room or for its floor or trim.

In the right-hand column are shown a vertical and a horizontal section of a record room illustrating how the building walls become part of the structure-supported vault when built in accordance with the general recommended construction as outlined. The recommended construction is general in character. Before the record room is built, the services of a competent architect or builder should be secured.

"W, D and H" Dimensions—The width, depth and height of the vault are optional with the exception that the height should not exceed 15 ft. and the total volume should not exceed 50,000 cu. ft.

"F" Front Wall Thickness—The thickness of the front wall of the record room is determined by the type of door used. A record room door bearing the Underwriters' fire classification one-half hour label requires a vestibule 9 ins. deep. The wall at the opening must be built to take this door in order to secure the benefit of the Underwriters' label.

If other doors are considered, the thickness of the front wall at the opening will be determined by the door used.

"S" Thickness of Side and Rear Wall—Structural considerations require that the side and rear walls should offer a minimum of two hours heat resistance. The recommended minimum for the thickness of these walls is: Reinforced concrete 4 ins.; plain concrete or concrete blocks 6 ins.; brick 8 ins.

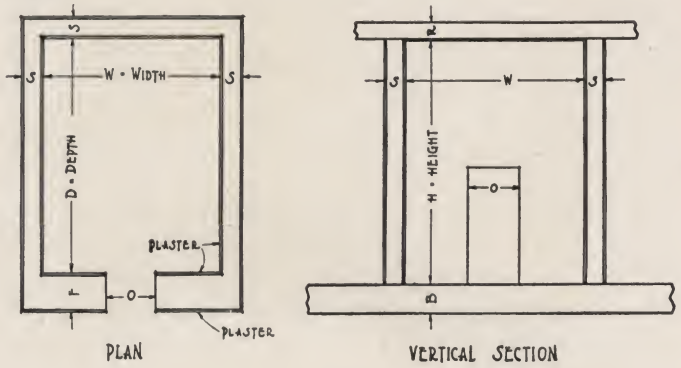
Recommended Construction

The record room may be constructed in such a manner that it uses the floor, ceiling and one or more walls of the building as its own, providing none of the walls has a fire resistance less than the walls of the record room itself.

The vertical joints should be well anchored or bonded and the joining of all walls with the building and with each other secured.

The record room must have no other opening than the one protected by a record room door.

If vertical shafts of the building, such as elevator shafts, are adjacent to the record room they should be separated by walls having a fire resistance equal to the walls of the record room.



HOW TO SELECT THE PROPER TYPE OF VAULT DOOR

No. 1 For a Fire-resistive Vault

(A)—For a ground-supported vault entirely independent of the building. A ground-supported vault is intended to afford full protection for its contents even in the event of complete destruction of the building.

A 2-hour vault door (Diebold Style No. 152) is recommended for the vaults on all floors except the bottom floor.

A 6-hour vault door (Diebold Style No. 156) is recommended for the vault on the bottom floor due to the soaking heat from the accumulation of hot and burning debris around the vault after the collapse of the building.

(B) For a structure-supported vault entirely dependent upon the framework of the building. Structure-supported vaults may be located on any floor of a modern fire-resistive building. They are designed to afford complete protection for the contents assuming that the building will not collapse in the event of a fire.

A 2-hour vault door (Diebold Style No. 152) is recommended for the structure-supported vault since it will be subjected only to the heat of the burning combustible materials on the one floor on which the vault is located.

A 6-hour vault door (Diebold Style No. 156) is recommended where the structure-supported vault is located near a concentration of combustible materials, such as records (in libraries and courthouses), merchandise (in warehouses and store rooms), and other severe risks.

No. 2 For a Record Room

The record room is an enclosure of fire-resistive construction intended for use where the volume of records is too large and not of sufficient importance to justify economically the provision of either vaults or safes, but still is sufficiently valuable to warrant a certain amount of special protection.

A record room should be used only in a building of modern fire-resistive construction.

A one-half hour Diebold Style "L" Record Room Door is recommended for the record room. If inside doors are considered an advantage the Diebold Styles "R," "S" and "T" Vault Doors are recommended.

No. 3 For a Burglar-resistive Vault

The minimum degree of burglar protection required for the vault of a commercial institution can best be determined by the rate of burglary insurance based on the volume of insurance to be carried.

It is recommended that the minimum protection should be a Class "D" vault requiring a solid steel door 1½ ins. thick (Diebold Style No. 215).

Where additional burglary protection is required, see the No. 235 Class "E" Burglar-resistive Vault Door, or write for recommendations and specifications on Diebold Bank Vault Doors.

GOVERNMENT VAULT AND CLOSET DOORS

Built to Government Specifications and Drawings, M-352-F. Detailed information on request.

WALL SAFE

Diebold Wall Safe No. 160 is designed for the protection of papers and valuables from fire and theft. It is 10½ ins. high, 15 ins. wide, 8⅞ ins. deep outside; 9⅞ ins. high, 14⅜ ins. wide, 7⅜ ins. deep inside. Shipping weight, 100 lbs.

It is well adapted to installation in apartments and private residences.

INSULATED SIX-HOUR FIRE-RESISTIVE VAULT DOOR—STYLE No. 156

UNDERWRITERS' LABORATORIES INSPECTED VAULT DOOR FIRE CLASSIFICATION 6 HR. NO



No. 156 Fire-resistive Door—Open

Recommended Use

Style No. 156 Vault Door is designed for severe fire risks. It should be used for ground-supported vaults on the lower stories and basements of buildings where floors may give way during a fire and subject the vault to the soaking heat of burning debris. It is recommended for the full protection of vital and irreplaceable records in any location.

Manufacturer's Specifications

(1) Protection—Underwriters' Laboratories Inspected Vault Door Fire Classification, 6 hours.

(2) Dimensions—***Clear Opening***—77¾ ins. high, 32 ins. wide.

Masonry Opening—See detail drawings on this page.

Front Frame Over All—91⅞ ins. high, 49 ins. wide.

Extreme Swing of Door—39⅞ ins.

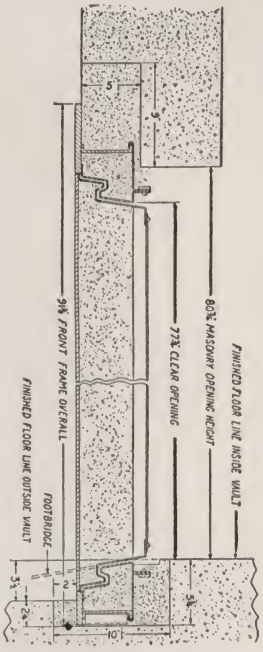
(3) Construction—Filled with Diebold fire-resistive insulation the door is 6⅛ ins. thick on edge; locked by ten ¾-in. diameter steel bolts checked by a Diebold 3-tumbler combination lock. On all four sides of door and vestibule the jambs are formed with deep tongue and groove. A hinged foot bridge covers bottom jamb.

(4) Finish—Olive green duco with gold decorations. Hinge tips, combination dial, ring and handle knob are brushed bronze. Lock and bolt handle grips are black bakelite.

(5) Shipping Weight—1650 lbs.

Note: This door will fit any wall thickness over 10 ins. and can be finished in special colors.

To Specify This Door, Write—Diebold Standard Style No. 156 Vault Door. (Specify swing of the door as right or left as you face it. The door illustrated is *right swing.*)



Vertical Section Showing Masonry, Clear Opening Dimensions and Floor Levels



No. 156 Fire-resistive Door—Closed

Instructions for Installing

(1) Provide wall opening of dimensions shown on masonry plans for this entrance.

Note: Make opening as closely as possible to given dimensions. Necessary allowances have been made for clearances.

(2) Make a grout of about two parts clean sand and one of portland cement and fill recess marked "A" on drawing below about one-third full.

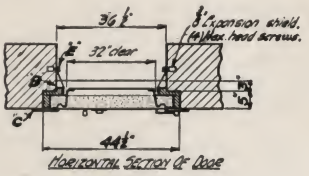
(3) Set door in opening and adjust door and frame plumb and level and wedge or prop frame in set position. Open and close door to see that it hangs plumb and swings easily; unless the frame has been properly set, the door will have a tendency to open or close of its own accord and further adjustments in leveling will be necessary until door remains in any set position.

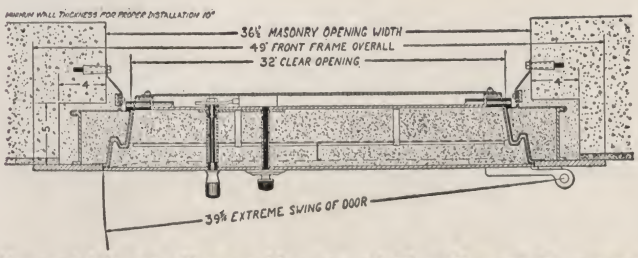
(4) Secure door in place by attaching plates and anchor bolts "E."

(5) Block off with wooden strips or frame gaps at points marked "B" and "C" if necessary.

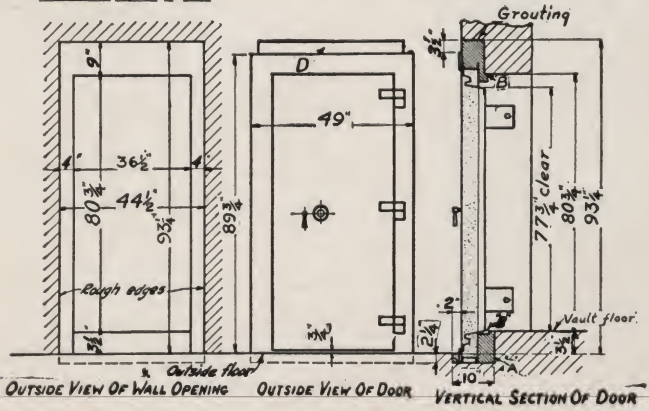
(6) Make grout of same proportions as above but thin enough to be poured through opening "D" and flow readily into all crevices between door frame and wall. Fill to top level of flange below opening "D" and fill opening "D" with concrete, brick or heavy concrete mortar.

(7) Allow forms to remain in position for at least four days, or until grout has set firmly, before removing forms to complete finishing plaster, etc.





Horizontal Section Showing Masonry and Clear Opening Dimensions



INSULATED TWO-HOUR FIRE-RESISTIVE VAULT DOOR—STYLE No. 152

Recommended Use

UNDERWRITERS' LABORATORIES INSPECTED VAULT DOOR FIRE CLASSIFICATION — 2 HR — No.

Style No. 152 Vault Door is designed for severe fire risks. It should be used for ground-supported vaults on the upper stories of buildings where floors may give way during the fire, or in structure-supported vaults in modern fire-resistive buildings. It is recommended as the minimum protection for vaults in any location that are used for the housing of vital and irreplaceable records, such as tracings, surveys, vital statistics, etc.

Manufacturer's Specifications

(1) Protection—Underwriters' Laboratories Inspected Vault Door Fire Classification, 2 hours.

(2) Dimensions—***Clear Opening***—77 23/32 ins. high, 29 7/16 ins. wide.

Masonry Opening—79½ ins. high, 32 ins. wide, 20 ins. thick including finish, with 2½x4-in. offset.

Front Frame Over All—87 5/16 ins. high, 42 9/16 ins. wide.

Extreme Swing of Door—37 ins.

(3) Construction—Filled with Diebold fire-resistive insulation the door is 3 3/16 ins. thick on edge; locked by ten ¾-in. diameter steel bolts checked by a Diebold 3-tumbler combination lock. On all four sides of door and vestibule the jambs are formed with deep tongue and groove. A hinged foot bridge covers the bottom jamb.

(4) Finish—Olive green duco with gold decorations. Hinge tips, combination dial, ring and handle knob are brushed bronze. Lock and bolt handle grips are black bakelite.

(5) Shipping Weight—1000 lbs.

Note: This door can be furnished special to fit a wall of any thickness over 8 ins. and can be finished in special colors.

To Specify This Door, Write—Diebold Standard Style No. 152 Vault Door. (Specify swing of the door as right or left as you face it. The door illustrated is *right swing.*)

Instructions for Installing

(1) Dimensions of wall openings should be as shown on masonry plans for this entrance.

(2) Uncrate door and remove rear flanges.

(3) Thoroughly soak face of rabbet and point edge with rich lime mortar as shown by Fig. 3 below.

Caution: *The pointing of rabbet should be thoroughly and carefully done to insure full protection of the door. The joint between wall and door must be tight.*

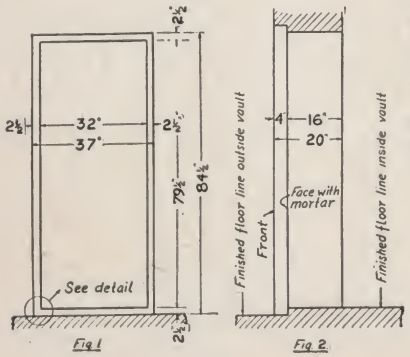
(4) Place door and frame in position in opening.

(5) Replace rear flanges.

(6) Open and close door to see that it hangs plumb and swings easily. If the door strikes on bottom, shim up under the hinge side of vestibule; if door strikes on top, shim up under the opposite corner.

(7) If when the door is properly placed, the back flanges do not lie up flat against the inside face of the wall, fill in the space between it and the wall with filler strips.

(8) Fill in uneven spaces between flanges and walls with cement or plaster.



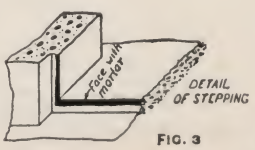


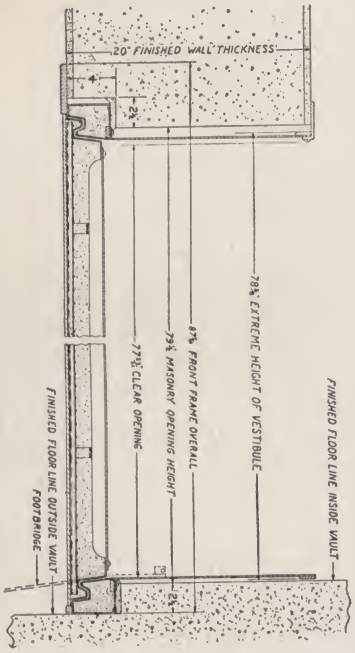
FIG. 3



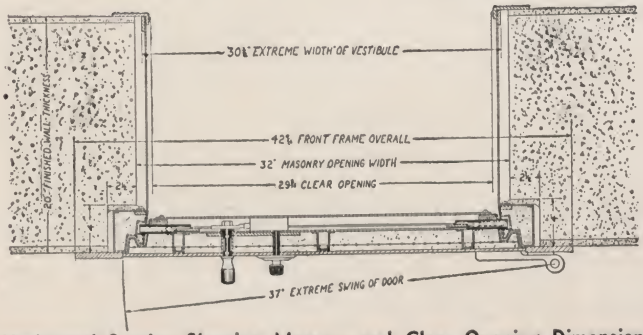
No. 152 Fire-resistive Door—Open



No. 152 Fire-resistive Door—Closed

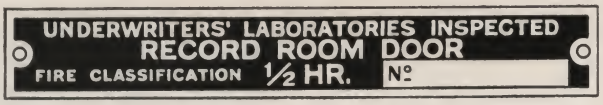


Vertical Section Showing Masonry, Clear Opening Dimensions and Floor Levels



Horizontal Section Showing Masonry and Clear Opening Dimensions

ONE-HALF HOUR RECORD ROOM DOOR—STYLE "L"





Style "L" Record Room Door—Open

Recommended Use

The name "record room" identifies an enclosure of fire-resistive construction intended for use where the volume of records is too large and not of sufficient importance to justify economically the provision of vaults or safes, but where valuables warrant a certain amount of special protection. It should be used only in buildings of modern fire-resistive construction.

The record room is recommended for records classified as "important" by the National Fire Protection Association in its report. Included in this classification are statistical studies, derived accounting records, particularly those of informative character, whose purpose is to maintain a check upon efficiencies.

Manufacturer's Specifications

(1) Protection—Underwriters' Laboratories Inspected Record Room Door Fire Classification, ½ hour.

(2) Dimensions—***Clear Opening***—75¾ ins. high, 28½ ins. wide. Flush entrance into vault.

Masonry Opening—79 ins. high, 33 ins. wide, 9 ins. thick including finish.

Front Frame Over All—80$\frac{13}{16}$ ins. high, 38¼ ins. wide.

Extreme Swing of Door—30¼ ins.

(3) Construction—With insulated inside cover plate the door is 2¼ ins. thick on edge; locked by five ¾-in. diameter steel bolts checked by a Diebold 3-tumbler combination lock, and an interlocking channel full height of door on hinge side. Vestibule jambs are welded into a solid piece with deep tongue striker. Door frame is formed from "Z" bars electrically welded.

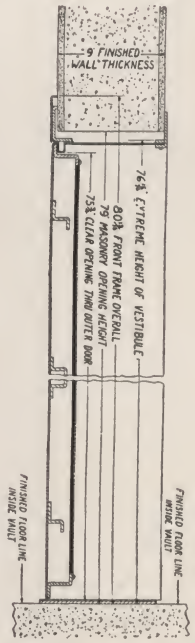
(4) Finish—Olive green duco with gold decorations. Hinge tips, combination dial, ring and handle knob are brushed bronze. Lock and bolt handle grips are black bakelite.

(5) Shipping Weight—375 lbs.

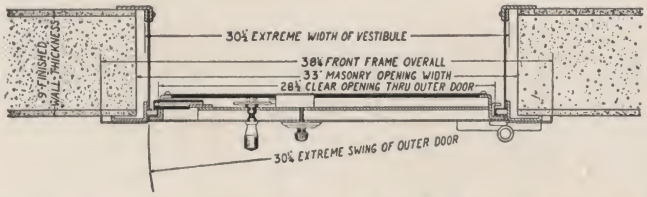
(6) Installation—No grouting required.

Note: This door can be furnished special to fit a wall of any thickness over 9 ins. and can be finished in special colors.

To Specify This Door, Write—Diebold Standard Style "L" Vault Door. (Specify the swing of the door as right or left as you face it. The door illustrated is *right swing.*)



Vertical Section Showing Masonry, Clear Opening Dimensions and Floor Levels



Horizontal Section Showing Masonry and Clear Opening Dimensions

Note

The Style "Tile" Fire-resistive Vault Door is exactly the same as the Style "L," except it does not have an insulated cover plate and does not bear the Underwriters' Laboratories, Inc. label.



Style "L" Record Room Door—Closed

FIRE-RESISTIVE VAULT DOOR—STYLE "T"

Recommended Use

Style "T" Vault Door is recommended wherever double outside and inside doors are required for record rooms. It is built with extra wide opening and flush entrance into vault to permit the easy use of busses.

With inside doors closed but without grouting the Style "T" doors afford forty to forty-five minutes protection. Contrast the protection afforded by this door with the old style plate door that offered twenty-seven minues protection—with inside doors closed and when fully grouted—based on tests by the Underwriters' Laboratories, Inc.



Style "T" Fire-resistive Vault Door—Closed



Style "T" Fire-resistive Vault Door—Open

Manufacturer's Specifications

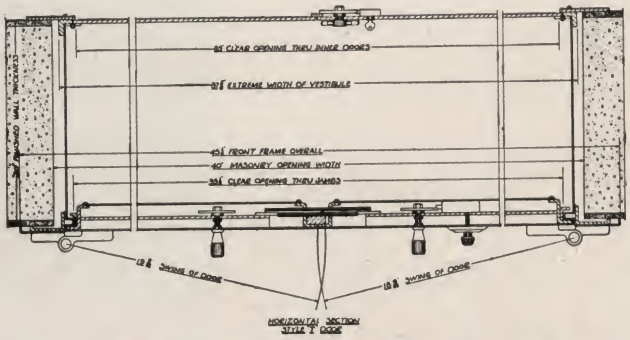
(1) Protection—Forty to forty-five minutes, based on standard tests with inside doors closed.

(2) Dimensions—*Clear Opening*—75⅜ ins. high, 35 ins. wide.

Masonry Opening—79 ins. high, 40 ins. wide, 20 ins. thick including finish.

Front Frame Over All—80⅛ ins. high, 45¼ ins. wide.

Extreme Swing of Doors—Right-hand door, 18$\frac{13}{32}$ ins. Left-hand door, 19$\frac{3}{32}$ ins.



Horizontal Section Showing Masonry and Clear Opening Dimensions

(3) Construction—The outside doors are 2¼ ins. thick on edge. The right-hand door is locked by seven ¾-in. diameter steel bolts; five at front, one at top and one at bottom; and an interlocking channel full height of door on hinge side. The left-hand door is locked by three ¾-in. diameter steel bolts; one at front, one at top and one at bottom; and an interlocking channel full height of door on hinge side, and a striker extending the full height of the door at front. Boltwork of outside doors is checked by a Diebold 3-tumbler combination lock. Door frames are formed from "Z" bars electrically welded.

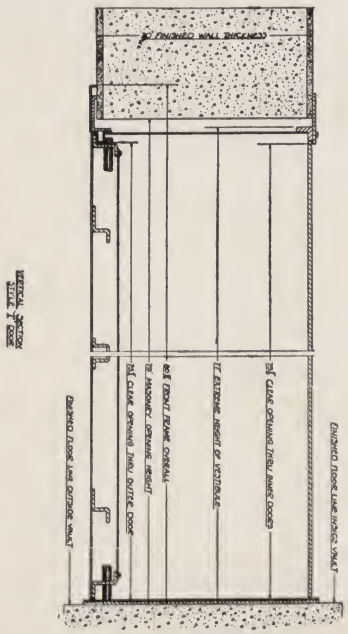
The inside doors are ⅛ in. thick and are locked at top, bottom and front with strap boltwork, checked with a flat key lock.

(4) Finish—Olive green duco with gold decorations. Hinge tips, combination dial, ring and handle knob are brushed bronze. Lock and bolt handle grips of outside doors are black bakelite. Bolt handle of inside doors is nickelplated.

(5) Shipping Weight—690 lbs.

Note: This door can be furnished special to fit any wall over 20 ins. thick and can be finished in special colors.

To Specify This Door, Write—Diebold Standard Style "T" Vault Door.



Vertical Section Showing Masonry, Clear Opening Dimensions and Floor Levels

FIRE-RESISTIVE VAULT DOORS—STYLES "R" AND "S"



Styles "R" and "S" Fire-resistive Doors—Open

Recommended Use

Styles "R" and "S" Doors are recommended wherever inside doors are required as auxiliary protection in record rooms. The Style "S" door is built with a wide opening to permit the use of busses. Both doors have a flush entrance into the vault.

With inside doors closed but without grouting the Styles "R" and "S" doors afford forty to forty-five minutes protection.

Contrast the protection afforded by these doors with the old style plate door that offered twenty-seven minutes protection—with inside doors closed and when fully grouted—based on tests by the Underwriters' Laboratories, Inc.



Styles "R" and "S" Fire-resistive Doors —Closed

Manufacturer's Specifications—Styles "R" and "S" Doors

(1) Protection—Forty to forty-five minutes, based on standard tests with inside doors closed.

(2) Dimensions, Style "R" Door—*Clear Opening*—75⅜ ins. high, 27 ins. wide.

Masonry Opening—79 ins. high, 33 ins. wide, 18 ins. thick including finish. Wall must be 15½ ins. thick to allow inside doors to pocket.

Front Frame Over All—80$\frac{13}{16}$ ins. high, 38¼ ins. wide.

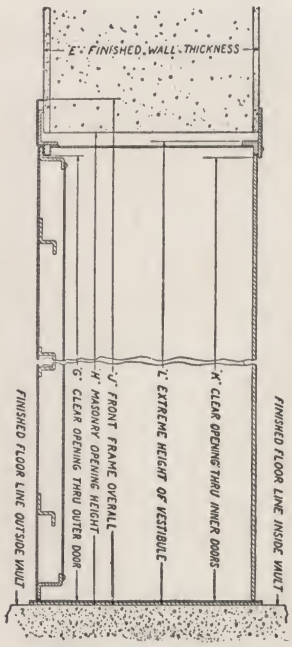
Extreme Swing of Door—30¼ ins.

(3) Dimensions, Style "S" Door—*Clear Opening*—75⅜ ins. high, 34 ins. wide.

Masonry Opening—79 ins. high, 40 ins. wide, 20 ins. thick including finish. Wall must be 18½ ins. thick to allow inside doors to pocket.

Front Frame Over All—80$\frac{13}{16}$ ins. high, 45¼ ins. wide.

Extreme Swing of Door—37¼ ins.



Vertical Section Showing Masonry Clear Opening Dimensions and Floor Levels

DIMENSION SCHEDULE, INCHES

	"R"	"S"
A	28½	35½
B	33	40
C	38¼	45¼
D	27	34
E	18	20
F	30¼	37¼
G	75¾	75¾
H	79	79
J	80$\frac{13}{16}$	80$\frac{13}{16}$
K	75⅜	75⅜
L	77	77
M	30⅜	37⅜

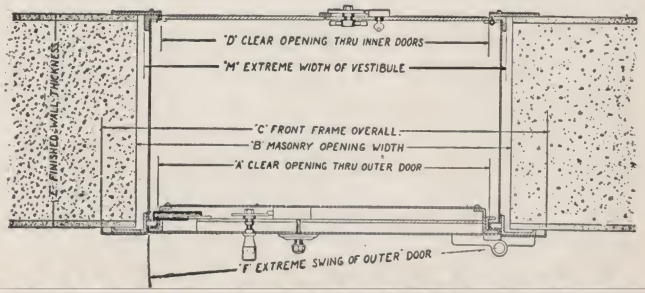
(4) Construction, Styles "R" and "S" Doors—Both doors are 2¼ ins. thick on edge; locked by five ¾-in. diameter steel bolts checked by a Diebold 3-tumbler combination lock, and an interlocking channel full height of door on hinge side. Vestibule jambs are welded into solid piece with deep tongue striker. Door frames are formed from "Z" bars electrically welded.

(5) Finish, Styles "R" and "S" Doors—Olive green duco with gold decorations. Hinge tips, combination dials, rings and handle knobs are brushed bronze. Lock and bolt handle grips of outside doors are black bakelite. Bolt handles of inside doors are nickelplated.

(6) Shipping Weights—Style "R" 500 lbs.; Style "S" 650 lbs.

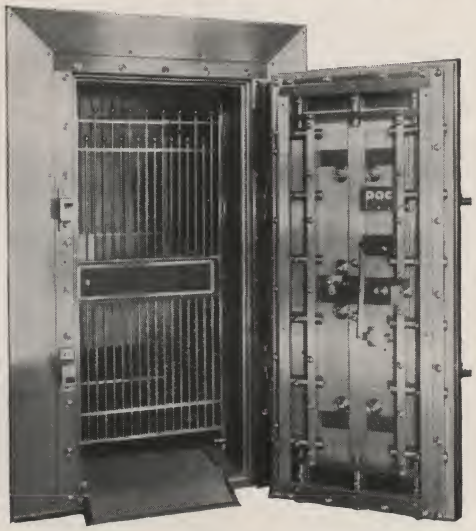
Note: These doors can be furnished special to fit any wall over 15½ ins. thick for the "R" and 18½ ins. for the "S"; and can be finished in special colors.

To Specify These Doors, Write—Diebold Standard [Style "R"] [Style "S"] Vault Door. (Specify the swing of the doors as right or left as you face them. The door illustrated is *right swing.*)



Horizontal Section Showing Masonry and Clear Opening Dimensions

BURGLAR-RESISTIVE VAULT DOORS—STYLES Nos. 235 AND 215



No. 235 Burglar-resistive Vault Door—Open
Class "E" Mercantile Burglary Insurance Classification

Recommended Use

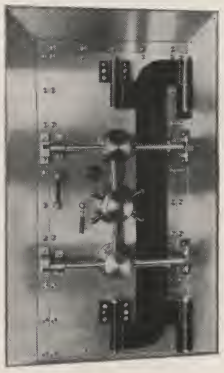
Style Nos. 235 and 215 Vault Doors are designed for vaults built for protection from burglarious attack. Banks find them ideal for record vaults requiring protection from burglary as well as fire. Jewelers find them profitable because of reduced insurance premiums; manufacturers, wholesalers, jobbers and merchants find them desirable for the protection of valuable stock, formulas and payrolls. Where greater protection is required write for specifications of Diebold Bank Vaults and Vault Doors.

No. 235 Door is nickel plated.

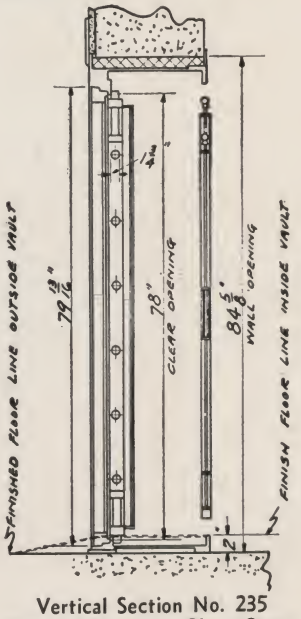
No. 215 Door is finished in Olive Green Duco with nickel plated edge moulding.



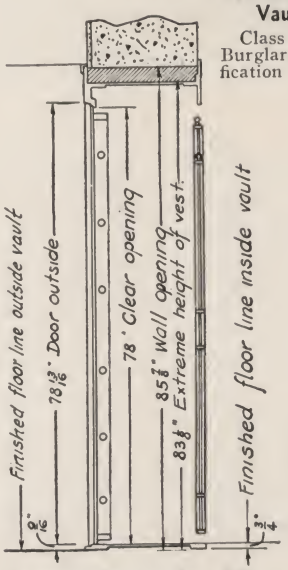
No. 215 Burglar-resistive Vault Door—Open
Class "D" Mercantile Burglary Insurance Classification



No. 235 Burglar-resistive Vault Door—Closed



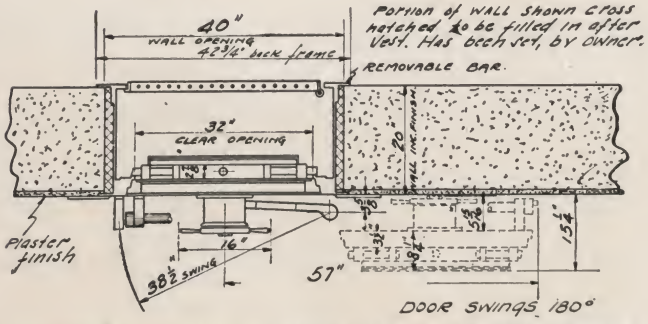
Vertical Section No. 235 Showing Masonry, Clear Opening Dimensions and Floor Levels



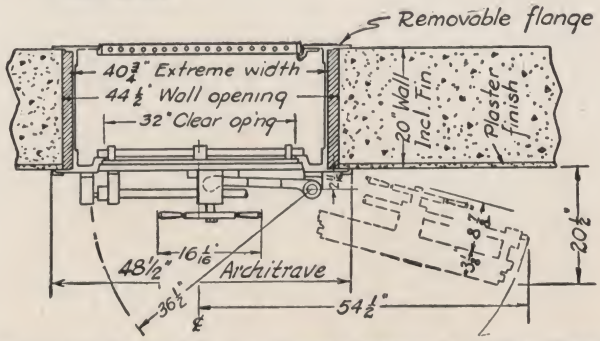
Vertical Section No. 215 Showing Masonry, Clear Opening Dimensions and Floor Levels



No. 215 Burglar-resistive Vault Door—Closed



Horizontal Section No. 235 Showing Masonry and Clear Opening Dimensions

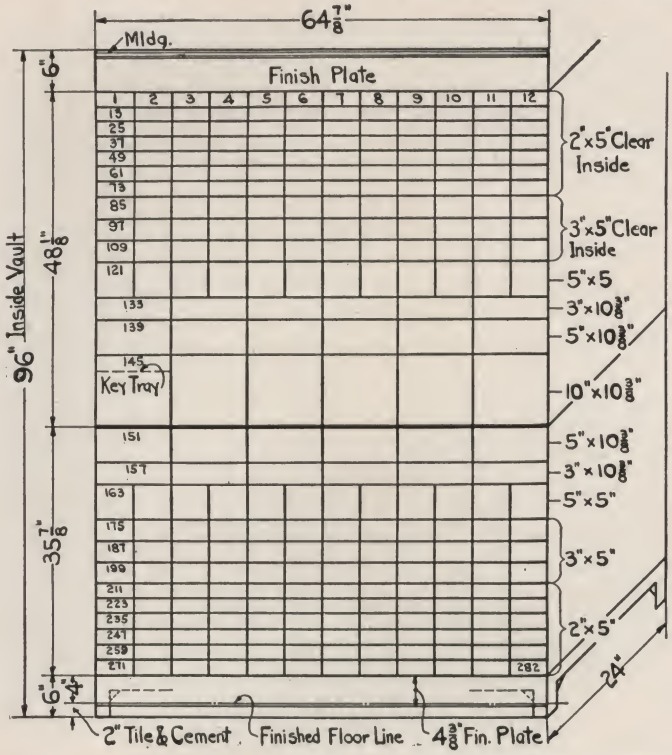


Horizontal Section No. 215 Showing Masonry and Clear Opening Dimensions

DIMENSIONS

Door No.	Solid steel, thickness, in.	Wall opening, in.		Depth of vestibule without lining, in.	Clear opening between Jambs, in.		Outside over all, in.		Approx. shipping weight, lbs.
		High	Wide		High	Wide	High	Wide	
215	1½	87 5/8	44½	20	78	32	87	48½	3000
235	3½	84 5/8	40	20	78	32	91 13/16	56 1/8	6100

SAFE DEPOSIT AND BOND BOXES



From the following information, together with the sketch, can be figured the number of safe deposit boxes or bond boxes, or any combination of both that will fit any given size space.

Formula for figuring the total number of boxes of average sizes in a given space: Multiply height in feet by the width in feet of the available space, and then by 6¾. This will give you the total number of boxes of average size.

Note: For computing size of sections, figure all verticals ⅜ in., including the outside shell. Figure the horizontals ⅛ in., except top and bottom of sections which are ¼ in.

SCHEDULE No. 1—SAFE DEPOSIT BOXES

*Boxes	Clear inside dimensions, in.		
	Height	Width	Depth
156	2	5	22 13/32
72	3	5	22 13/32
24	5	5	22 13/32
12	3	10 3/8	22 13/32
12	5	10 3/8	22 13/32
6	10	10 3/8	22 13/32

SCHEDULE No. 2—BOND BOXES

Clear inside dimensions, in.		
Height	Width	Depth
1 25/32	4 11/16	21½
2 25/32	4 11/16	21½
4 25/32	4 11/16	21½
2 25/32	10 1/16	21½
4 25/32	10	21½
9 23/32	10	21½

*Total, 282 boxes.

Specifications

Construction—Top and bottom ¼ in.; horizontals ⅛ in.; verticals ⅜ in.; doors ½ in.

Locks—Double nose flat customer and guard key or corrugated customer and guard key, Underwriters' certified approved pickproof lock.

Bond Boxes—Heavy reinforced metal with lids hinged two-thirds way back. Lids swing 180 degrees—hasp fastener. Heavy wire drop handle each end. Finished inside and out in baked black enamel.

General Finish—Doors, satin nickel inside and out; lock cases, satin bronze; lock noses, satin brass; hinges, buffed bronze; exposed edges of all sides, top and bottom, and horizontal partitions, polished steel; interior of section painted maroon; exterior of section painted gray.

VAULTS AND VAULT DOORS

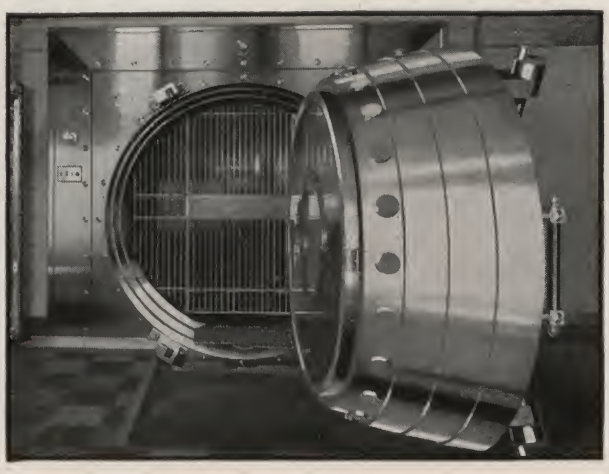
Complete Diebold Bank Vaults are in use in many of the largest banks throughout the United States. These include all styles and sizes from the simplest to the most elaborate. In this work all necessary equipment, such as safe deposit boxes, linings, etc., can be furnished. Our engineering department, together with the entire personnel of our various branch offices, is at the disposal of the architect or contractor. Sketches and estimates on special work, as well as stock designs, will be gladly furnished without charge. In addition to our lines of standard vault doors described below, we are prepared to build any style or size to meet special conditions.

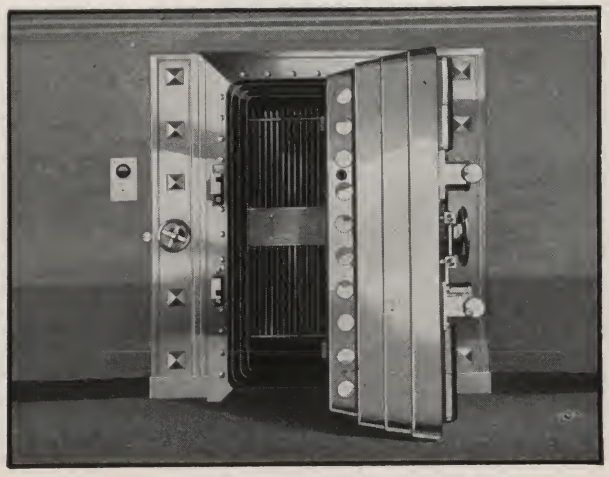
Comparison of Circular and Rectangular Doors

The illustrations below show two characteristic Diebold Vault Door installations. Both doors, the one circular, the other rectangular, afford the same protection to the bank's vault. Both are massive, impressive and beautiful. Our purpose in showing these two doors is to accord you an opportunity of making a fair comparison. Each harmonizes with appropriate types of bank design. The rectangular door occupies a minimum of space and is particularly desirable where space is at a premium. Where sufficient space is available at the proper location the circular door makes an unusually fine showing. Naturally, preference will be based on the surrounding conditions.

DIMENSIONS OF DIEBOLD STANDARD BURGLAR-PROOF VAULT FRONTS

Door No.	Solid steel, thickness in.	Wall opening, in.		Depth of vestibule (without lining), in.	Clear opening between jambs, in.		Outside over all, in.	
		High	Wide		High	Wide	High	Wide
Rectangular Doors								
215	1½	85 7/8	44½	20	78	32	87	48½
235	3½	84 5/8	40	20	78	32	91 13/16	56⅛
507	7	93	49	20	78 3/32	32 3/16	95	60
610	10	93	49	20	78 3/32	32 3/16	101¾	72
612	12	95½	52½	20	78	34	105¾	80
616	16	98	56	21	78	34	107⅞	82 11/16
1642	16	102	64	21	82	42	112¼	91 7/16
620	20	99	60	24	80	38	109 3/16	88 25/32
625	25	111½	72¾	27½	84	40	116 21/32	97¾
Circular Doors								
1010	10	96	96½	20	80	80	102¼	119
1016	16	100	100	24	80	80	106	123¾
1020	20	106	106	27	82	82	109¼	126
1025	25	111¾	111½	33	84	84	115	133





THE NEW DIEBOLD REKORDESK SAFES

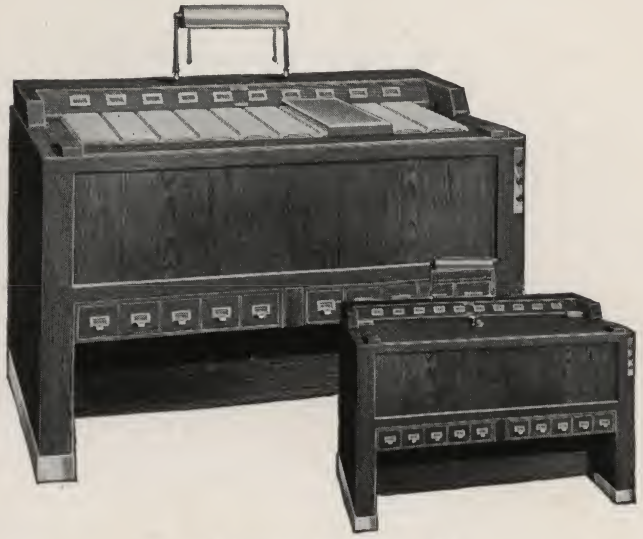
Records Should Be Protected Where They Are Used

Diebold Rekordesk Safes, either electrically or manually operated, are especially designed to bring certified fire protection to vertical card records where they are used—24 hours a day. They are equally efficient for both hand and machine posting. The sliding desk top permits quick access to any file and is valuable as a working surface for posting and sorting.

A few of the places where these safes are most needed are:

Savings departments of banks and trust companies.
Building and loan associations.
Installment credit merchants.
Election boards.
Inventory control records and payroll records.

3x5-in. signature card index files are optional and may be installed, as shown, when ordered as extras. Lighting fixtures are extras to be ordered when desired.



The Electric Rekordesk Safe

"Push the button." The safe is automatically opened and closed. The door disappears behind the safe in open position

Capacity

Ledger card trays are available for all standard size cards. Maximum capacity of the Electric Rekordesk Safe is ten trays for 5x8-in. cards; for the Manually Operated Rekordesk Safe nine trays for 5x8-in. cards. The approximate capacity of each tray is 1500 medium weight ledger cards, allowing 1¾-in. fan and one master index for each 100 cards and sub-index for each 10 cards.



Manually Operated Rekordesk Safe

The counterbalanced door is easily operated by hand

FIRE-RESISTIVE SAFES

Dominator Line

Underwriters' "A" and T-"20" label built in 9 models.

Commander Line

Underwriters' "B" and T-"20" label built in 7 models.

Guardian Line

Diebold certified 1-hour label, built in 3 models.

Commercial Line

Diebold certified 2-hour label, built in 8 models.

Rekordesk Safes

Diebold certified 2-hour label, built in 4 models, operated both electrically and manually.

Receding Door Safe

Diebold certified 2-hour label, built in 2 models.

Finishes

The standard finish is a beautiful satin olive green duco.

Write for complete descriptive literature.



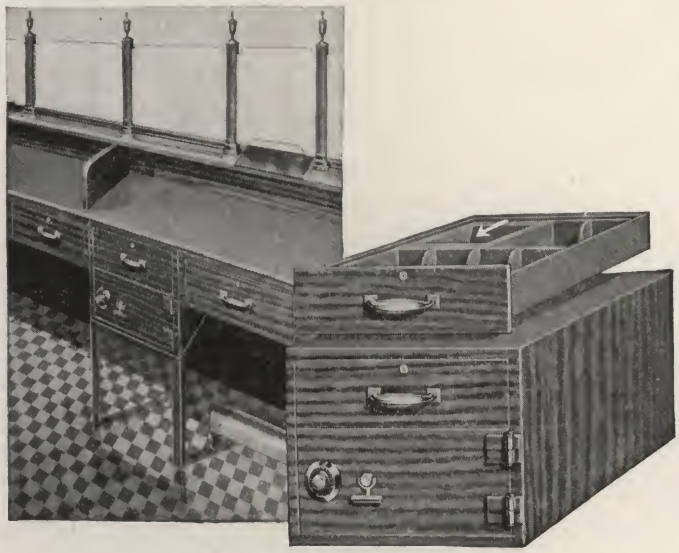
Dominator Safe



Receding Door Safe

EMBEZZLEMENT AND HOLD-UP PROTECTION

Diebold Tellers Safety Lockers provide tellers and cashiers with individual protection balanced with their responsibility. The teller gains positive control over all money in his care—no one else can gain access to his locker; the possibility of collusion among employees is removed—responsibility is definitely fixed.



Tellers Safety Locker
Can be installed in new or old fixtures

Operated electrically or with Diebold Delayed Control Timelock, hold-up protection is afforded by establishing the principle of removed control over the operation of the lock. Obeying the bandit's commands to the letter the door is deadlocked for a predetermined period and the loss of money prevented.

Diebold Tellers Safety Lockers are units of daily utility. Sufficient currency is handy for normal use—surplus funds are protected at all times. When the teller leaves for lunch, or leaves the office temporarily, there is a convenient button that locks up all exposed money. Only the teller who has exclusive control over the locks can open the locker.

These lockers may be operated manually, electrically or with the electrical Diebold-Lake Erie Tear Gas System of Bank Hold-up Protection.

Write for detailed information for including Tellers Safety Lockers in fixture plans.



Roll Top Tellers Safety Locker
Can be installed in new or old fixtures

BANK HOLD-UP PROTECTION

Diebold-Lake Erie Tear Gas System

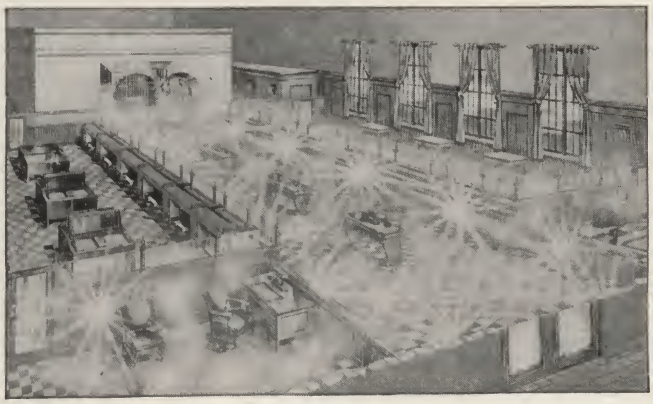
Without danger to human life:

(1) Hold-ups are prevented.

(2) Attempted Hold-ups are defeated.

Principles of Protection

Bank banditry is increasing every day. Daily papers record the bandits' progress. The only way it can be stopped is through protection on the premises that will defeat the bandits when they come, and keep them away.



Bank Lobby Illustrated at Instant Tear Gas Is Released
Note Tellers Safety Lockers

Holdups can only be *prevented* by a system of protection that is positive in *defeating* them. The Diebold-Lake Erie System accomplishes both without danger to human life.

The Diebold-Lake Erie Tear Gas is a defense against banditry known to and feared by criminals—it blocks their path to a quick get-away and liberty. Thus banks protected with this system find the bandits passing them by for easier victims.

Attempted hold-ups are defeated by release of tear gas which instantly floods the banking room, driving the bandits out of the bank, incapacitated and easy subjects for police attention. In this condition the bandits are easily defeated and can be captured without the injuries and death caused by gun battles.

Underwriters' Laboratories Approval

The Underwriters' Laboratories, Inc., of Chicago, have approved this system of bank hold-up protection and it is installed in accordance with their requirements. They have approved the tear gas employed as being non-toxic and without permanent effects.

Insurance

Banks equipped with this approved system of protection are entitled to a substantial reduction in hold-up insurance premiums—a convincing testimonial of its worth in preventing and defeating hold-up attacks.

Installation and Operation

Foot and hand control stations are installed within easy reach of all tellers at strategic points throughout the bank. Any one station releases entire system. A self-contained and self-supervised electric circuit is used.

Release outlets are built into fixtures in accordance with Underwriters' specifications at selected locations to afford full and instant coverage of lobby, entrances and exits with the tear gas.

Both hand and foot controls are especially designed to avoid possibility of accidental release of the tear gas.

We will be glad to mark prints of plans for the installation of this system in accordance with Underwriters' requirements, without obligation.

A PARTIAL LIST OF INSTALLATIONS

DIEBOLD

FIRE-RESISTIVE VAULT DOORS

BEVERLY HILLS, CALIF., City Hall
LOS ANGELES, CALIF., Fox Film Co.
COLORADO SPRINGS, COLO., City Hall
BRISTOL, CONN., New Departure Mfg. Co.
DOVER, DEL., State Legislature Bldg.
TAMPA, FLA., Hillsborough County Court House
ATLANTA, GA., Atlanta City Hall
CHICAGO, ILL., State Lake Bldg.
INDIANAPOLIS, IND., Jno. Deere Plow Co.
GOODLAND, KAN., Sherman County Court House
BATON ROUGE, LA., State Capitol
NEW ORLEANS, LA., Criminal Courts Bldg.
BOSTON, MASS., William Filene's Sons
KALAMAZOO, MICH., City Hall
DETROIT, MICH., General Motors Laboratory
BRECKENRIDGE, MINN., Breckenridge County Court House
ST. PAUL, MINN., County Court House; State Office Bldg.
KANSAS CITY, MO., Chevrolet Motor Co.
ST. LOUIS, MO., Lindell Trust Co.
CAMDEN, N. J., Camden County Court House and Municipal Bldg.
BUFFALO, N. Y., St. Joseph Cathedral
NEW YORK, N. Y., Bronx County Bldg.
SCHENECTADY, N. Y., General Ice Cream Co.
CINCINNATI, OHIO, The Union Gas & Electric Co.
CLEVELAND, OHIO, Medical Arts Bldg. (Terminal); Midland Bank Bldg. (Terminal)
COLUMBUS, OHIO, State Office Bldg.
PHILADELPHIA, PA., City Transit Administration Bldg.
PITTSBURGH, PA., Allegheny General Hospital
FORT WORTH, TEX., Montgomery Ward Co.
GALVESTON, TEX., Union Depot
WHEELING, W. VA., Hazel Atlas Glass Co.
MADISON, WIS., Kupfer Foundry & Machine Co.
MILWAUKEE, WIS., Public Safety Bldg.
LARAMIE, WYO., Board of County Commissioners

DIEBOLD SAFE & LOCK CO.

CANTON . . . . . OHIO

OVER SEVENTY YEARS OF PROTECTION SERVICE

THE MOSLER SAFE CO.

GENERAL SALES OFFICES AND FACTORIES
HAMILTON, OHIO

NEW YORK, N. Y., 373 Broadway — CHICAGO, ILL., 58-60 Lake Street AND OTHER PRINCIPAL CITIES — BOSTON, MASS., 84 Sudbury Street

Mosler Products and Service

BANK VAULT DOORS; INSULATED STEEL VAULT DOORS; BOOK and STORAGE VAULT DOORS.

Also Safe Deposit Boxes; Night Deposit Safes; Hotel and Club Safes; Counter Height Safes; Armored Steel Chests; Wall Safes; Silver and Fur Storage Vaults; Safes for Steel Files; General Office Safes; Steel Filing Units and Security Lockers.

Full information covering the complete Mosler line will be sent promptly upon request. Wire, write or telephone the nearest Mosler office for conferences, suggestions, plans, specifications and estimates.

FLAT SILL VAULT DOORS

(Underwriters' Labeled)

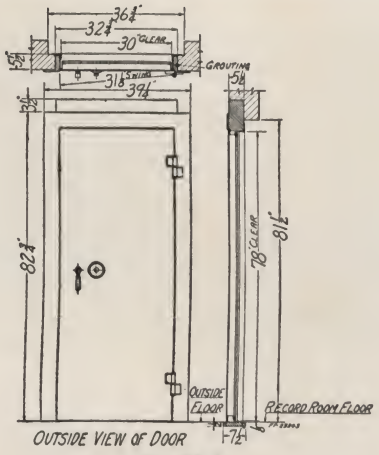
Economy and Safety

Eliminates the necessity of building elevated vault floor. No bridge to remove when fire necessitates emergency closing of door.

Convenience

Sill is flat, requiring no bridge.

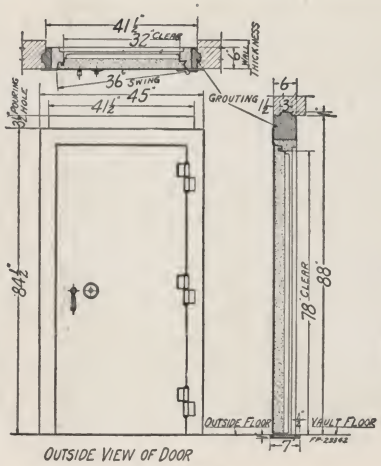
This makes it easy to move buses and trucks into and out of the vault.



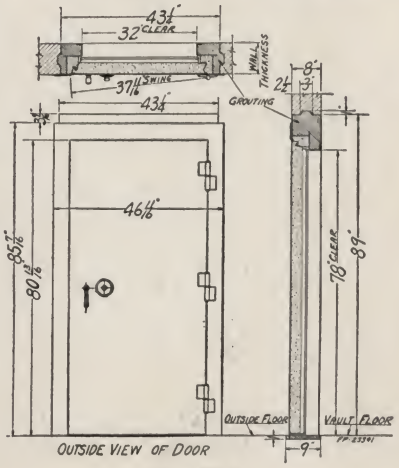
No. FS-1
Record Room Door
Bearing Underwriters' 1-hour Label



Doors shipped right hand as illustrated unless left swing is specified

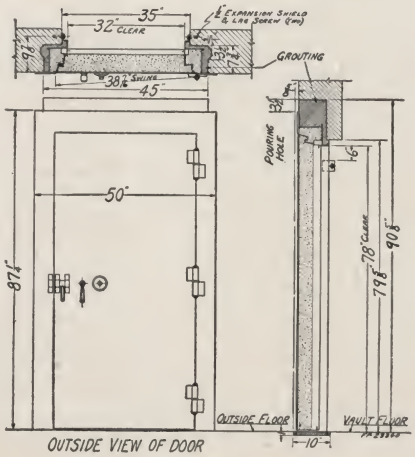


No. FS-2
Vault Door
Bearing Underwriters' 2-hour Label



No. FS-4
Vault Door
Bearing Underwriters' 4-hour Label





No. FS-6
Vault Door
Bearing Underwriters' 6-hour Label

All Doors Can Be Furnished with Underwriters' Relocking Device Label

HERRING-HALL-MARVIN SAFE CO.

GENERAL SALES OFFICE AND FACTORY
HAMILTON, OHIO

BRANCH OFFICES
NEW YORK, N. Y., 400 Broadway
CHICAGO, ILL., 223-225 West Lake Street
BIRMINGHAM, ALA., 1734 First Avenue North
SAN FRANCISCO, CAL., 214 California Street

THE COMPANY, ITS PRODUCTS AND SERVICE

This company manufactures a complete and comprehensive line of bank vaults, fire resistive vault doors, filing safes classes A and B, burglarproof chests, night depositories and other like equipment. Suggested features are detailed on this and the following pages.

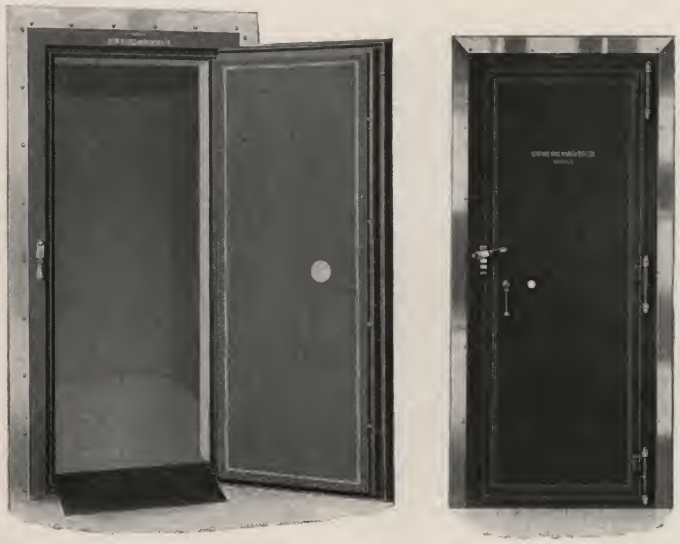
Information about design, construction and costs will be furnished to architects without entailing any obligation for such service as may be involved.

For nearly a century the HERRING-HALL-MARVIN SAFE Co. has built into its product the same undeviating quality.

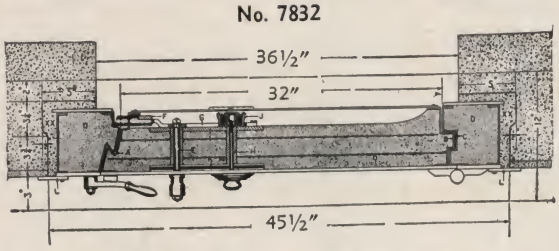
FIREPROOF VAULT DOORS

No. 7832—Six Hour Label

Certified six hour label vault door No. 7832 passed the six-hour furnace test of the Underwriters' Laboratories, Inc.



No. 7832



Width of Architraves—49 7/16 in. overall

Horizontal Section, No. 7832, Showing Masonry Plan

A—Tenon and groove. B—Interlocking flange. C—Spring seal. D—Fireproof filling. E—Handle arbor. F—Carrying bar. G—Slide bar. H—Lock arbor or spindle. I—Lock plate. J—Combination lock. K—Drillproof plate. L—Moulding bars. XX—Spaces to be filled with cement grout after vault entrance is in position

Manufacturer's Specifications—Trim, 89 9/16 in. high by 49 7/16 in. wide; clear opening through vestibule, 78 in. high by 32 in. wide. Dimensions and shape of required wall opening are shown on sectional drawings.

The door is locked by means of six bolts 7/8-in. diameter, and by the interlocking flange at the back. The lock and its connections are protected by a drillproof plate.

The jambs are built with two flanges with tenon and groove at top, front and bottom, and interlocking flange with spring seal at rear.

A hinged, never-slip footbridge with incline is furnished.

Shipping weight, approximately 1720 lbs. Printed instructions for setting are furnished with all doors and, if requested, will be sent on receipt of order.

No. 7830—Six Hour Label

This door is like No. 7832 except that it is 2 in. less in width throughout with clear opening 78x30 in. Otherwise the detail plan and specifications of No. 7832 apply to No. 7830.

No. 7834—Six Hour Label

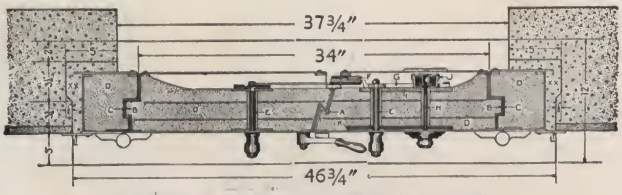
This double door is for use where a very wide vault entrance is required. It will be furnished in widths up to 53⅜ in. clear opening.

This six-hour vault entrance is built in a similar manner to No. 7832.

Manufacturer's Specifications—Trim, 89 9/16 in. high by 50¾ in. wide. Clear opening through vestibule 78⅛ in. high by 34 in. wide.

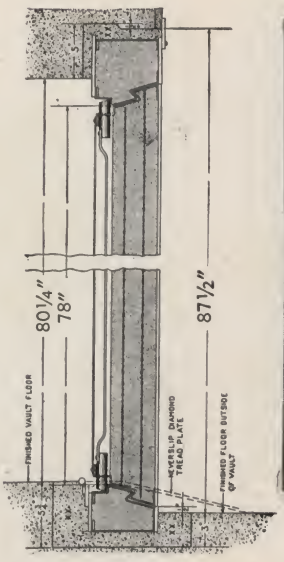
The righthand door is locked by means of six bolts ⅞-in. diameter, and by the interlocking flange at back. Lock and connections protected by drillproof plate. The lefthand door is locked by up-and-down bolts, by overlap of righthand door at front and by interlocking flange at back.

Tenon and groove, interlocking flange with spring seal, and footbridge, like No. 7832. Shipping weight, approximately 1945 lbs.



Width of Architraves—50¾ in. overall

Horizontal Section, No. 7834, Showing Masonry Plan



Height of Architrave—89 9/16 in. overall

Vertical Section Showing Masonry Plan



No. 7834

Note: The vertical section at left applies to all six-hour label doors (No. 7832, No. 7830 and No. 7834).

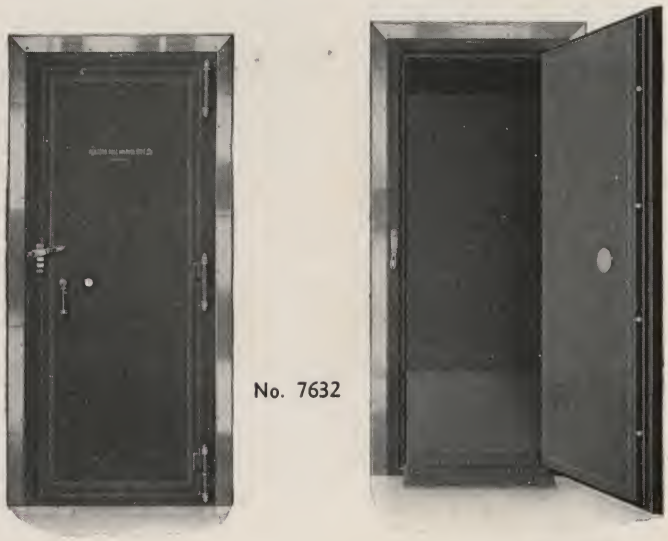
MINIMUM WALL THICKNESSES FOR SIX HOUR VAULTS AS SPECIFIED BY NATIONAL FIRE PROTECTION ASSOCIATION

Number of stories counting from top down	Reinforced concrete, in.	Brick or plain concrete, in.	Protected steel or reinforced concrete frames, in.	
			Reinforced concrete panels	Brick or plain concrete panels
Top	10	12	10	12
2nd	10	12	10	12
3rd	10	12	10	12
4th	12	16	10	12
5th	12	16	12	16
6th	12	20	12	16
7th			12	16
8th			12	16
9th			12	16
10th			14	16

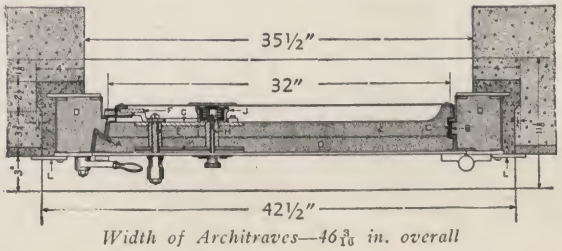
Note: These specifications apply to ground supported vaults whose construction is independent of the building in which they are located. Wall thicknesses of structural supported vaults that are supported by the framework of buildings of fire-resistive construction must not be less than those specified for the top stories of ground supported vaults.

No. 7632—Two Hour Label

Certified two hour label vault door No. 7632 passed the two hour furnace test of the Underwriters' Laboratories, Inc.



No. 7632



Width of Architraves—46 3/16 in. overall

Horizontal Section, No. 7632, Showing Masonry Plan

A—Tenon and groove. B—Interlocking flange. C—Spring seal. D—Fireproof filling. E—Handle arbor. F—Carrying bar. G—Slide bar. H—Lock arbor or spindle. I—Lock plate. J—Combination lock. K—Drillproof plate. L—Moulding bars. XX—Spaces to be filled with cement grout after vault entrance is in position

Manufacturer's Specifications—Trim, 85 13/16 in. high by 46 3/16 in. wide. Clear opening through vestibule 76 in. high by 32 in. wide. Dimensions and shape of required wall opening are shown on sectional drawings.

The door is locked by means of six bolts ¾-in. diameter, and by the interlocking flange at the back. The lock and its connection are protected by a drillproof plate.

The jambs are built with two flanges with tenon and groove at top, front and bottom, and interlocking flange with spring seal at rear. A hinged, neverslip footbridge with incline is furnished.

Shipping weight, approximately 1420 lbs. Printed instructions for setting are furnished with all doors and, if requested, will be sent on receipt of order.

No. 7629—Two Hour Label

This door is like No. 7632 except that it is 3 in. less in width throughout, with clear opening 76x29 in. Otherwise the detail plan and specification of No. 7632 apply to No. 7629.

MINIMUM WALL THICKNESSES FOR TWO HOUR VAULTS AS SPECIFIED BY NATIONAL FIRE PROTECTION ASSOCIATION

Number of stories counting from top down	Reinforced concrete	Brick	Hollow clay tile or concrete block	Protected steel or reinforced concrete frames		
				Reinforced concrete panels	Brick or plain concrete panels	Hollow clay tile or concrete block panels
Top	6	8	12	6	8	12
2nd	8	12	12	8	12	12
3rd	10	12	16	10	12	16
4th	10	16	20	10	12	16
5th	12	16		12	16	20
6th	12	16		12	16	20
7th				12	16	20
8th				12	16	20
9th				12	16	20
10th				12	16	20

Note: These specifications apply to all ground supported vaults whose construction is independent of the building in which they are located. Wall thicknesses of structural supported vaults that are supported by the framework of buildings of fire-resistive construction must not be less than those specified for the top stories of ground supported vaults, except that the minimum thicknesses of walls of hollow clay tile or concrete block for a two hour vault may be 8 in.

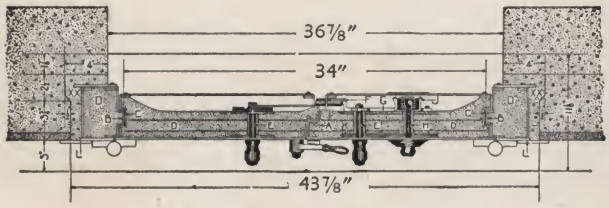
No. 7634—Two Hour Label

This double door is for use where a very wide vault entrance is required. It will be furnished in widths up to 53 3/8 in. clear opening.

Manufacturer's Specifications—Trim, 85 13/16 in. high, 47¾ in. wide. Clear opening through vestibulte 76 in. high, 34 in. wide.

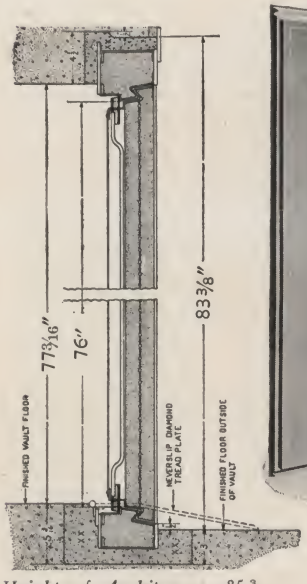
The righthand door is locked by six bolts ¾-in. diameter and by the interlocking flange at the back. Lock and connections protected by drillproof plate. The lefthand door is locked by up-and-down bolts, by overlap of righthand door at front and by interlocking flange at back.

Tenon and groove, interlocking flange with spring seal, and footbridge, like No. 7632. Shipping weight, approximately 1580 lbs.



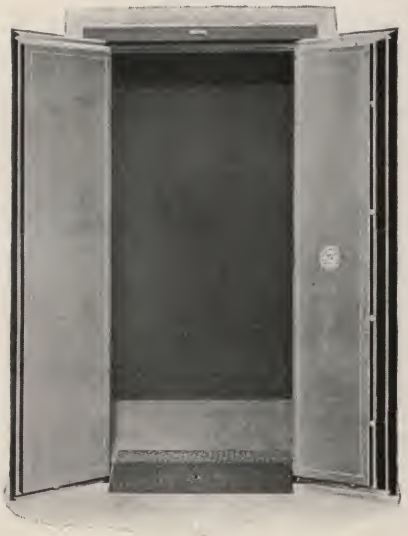
Width of Architraves—47¾ in. overall

Horizontal Section, No. 7634, Showing Masonry Plan



Height of Architraves—85 13/16 in. overall

Vertical Section, Showing Masonry Plan



No. 7634

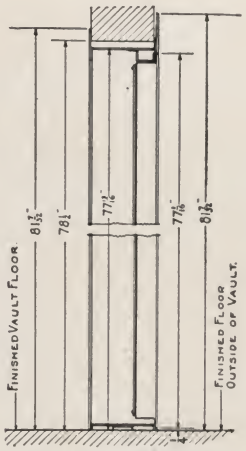
Note: Vertical section at the left applies to all two hour label doors (No. 7632, No. 7629 and No. 7634.)

No. 63—Half Hour Label

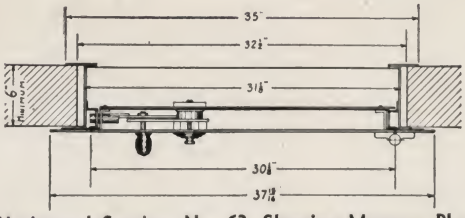
This vault door is intended for use in record rooms and carries the ½ hour label of the Underwriters' Laboratories, Inc. It is furnished with or without inside doors and with vestibule 6 in. or more in depth according to the thickness of the wall.



No. 63



Vertical Section Showing Masonry Plan



Horizontal Section, No. 63, Showing Masonry Plan

Manufacturer's Specifications—Trim 81 7/8 in. high, 37 1/8 in. wide. Wall opening required 78½ in. high, 32½ in. wide. Clear opening through vestibule 76 1/8 in. high, 28¾ in. wide.

This door will be furnished with label, with clear opening up to 32 in. wide.

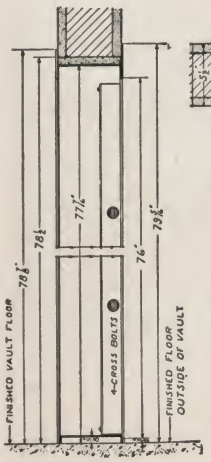
Four bolts ⅞-in. diam. at front with interlocking flange at rear of door. Insulated steel cover plate over bolt work. Bolt work checked by four-tumbler combination lock.

Inside doors, when used, pocket in vestibule 18 in. deep. Clear opening through inside doors, 27⅛ in.

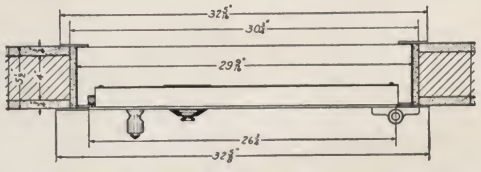
Horizontal and vertical sections of this door are shown without inside doors. These sections also give the dimensions of wall openings.

No. 62

This vault door is intended for use in tile, brick or light concrete walls. It is furnished with or without inside doors.



Vertical Section, Showing Masonry Plan



Horizontal Section, Showing Masonry Plan

Manufacturer's Specifications—Trim, 79 5/16 in. high, 32⅝ in. wide. Wall opening required 78½ in. high, 30¾ in. wide, 5½ in. deep. Clear opening through vestibule, 75½ in. high, 26½ in. wide. The depth of vestibule may be increased for walls of greater thickness.

Four bolts ⅞-in. diameter at front with interlocking flange at rear. Steel cover plate over bolt work. Bolt work checked by four-tumbler combination lock. Inside doors, when used, pocket in vestibule 16¼ in. deep. Clear opening through inside doors, 26 in. Horizontal and vertical sections are shown without inside doors. These sections also give the dimensions of wall openings.

In appearance No. 62 closely resembles No. 63.

Fireproof Doors with Vestibules

Nos. 20, 21 and 22 have interlocking back flange.

Manufacturer's Specifications—*No. 22*—Trim, 83¼ in. high, 38½ in. wide. Wall opening required, 81½ in. high, 34½ in. wide, 20 in. deep. Clear opening through vestibule 77¾ in. high, 29 in. wide. Inside doors pocket in vestibule 17¾ in. deep. Twelve bolts, 1-in. diam., locking through solid bolt frame on sides, top and bottom and through center of door, and checked by four-tumbler combination lock.

No. 21—Same as No. 22 excepting bolt work. Six bolts, 1-in. diam., locking at ten points through solid bolt frame.

No. 20—Same as Nos. 22 and 21 excepting that bolt work operates through angle bolt frame.



No. 20



No. 22

No. 17—Trim, 80 5/16 in. high, 35⅝ in. wide. Wall opening required, 79 in. high, 32 in. wide, 20 in. deep. Clear opening through vestibule, 75½ in. high, 26½ in. wide. Inside doors pocket in vestibule 16¼ in. deep. Five bolts, 1-in. diam., locking at eight points through angle bolt frame and checked by four-tumbler combination lock.



No. 16

No. 19—Same as No. 17 excepting bolt work. Three bolts, 1-in. diam., locking at six points through angle bolt frame.

No. 16—Trim, 80 5/16 in. high, 31⅝ in. wide. Wall opening required 78 in. high, 29 in. wide, 20 in. deep. Clear opening through vestibule, 75½ in. high, 22½ in. wide. Inside doors will pocket in vestibule 14¼ in. deep. Two bolts 1-in. diameter, locking at four points through angle bolt frame.

No. 14—Trim, 83¼ in. high, 49 in. wide. Wall opening required 81⅜ in. high, 44 in. wide, 20 in. deep. Clear opening through vestibule, 76¾ in. high, 36½ in. wide. Inside doors will pocket if vestibule is increased to 22½ in. depth—this will increase clear width of opening through vestibule to 38½ in. Bolts, 1-in. diam., locking each door through solid bolt frames.



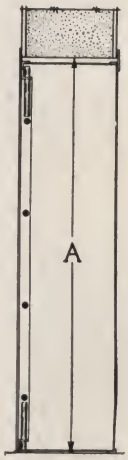
No. 17

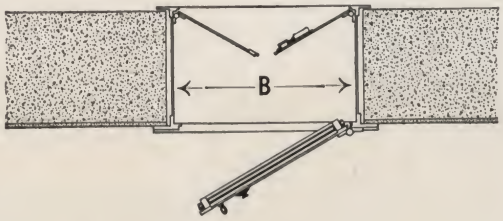


No. 14

Fireproof Doors with Vestibules (Continued)

Vault doors No. 14, 16, 17, 19, 20, 21, 22 and 28 are equipped with a *special relocking device with the inspection label of the Underwriters' Laboratories, Inc. A discount of 10 per cent is allowed from all premiums on burglary insurance covering the contents of vaults where these doors are used.*





MASONRY OPENINGS (INCHES)

	A	B		A	B
No. 14	81⅜	44	No. 20	81½	34½
No. 16	79	28	No. 21	81½	34½
No. 17	79	32	No. 22	81½	34½
No. 19	79	32	No. 28	81⅝	34

Planning for Vault Doors

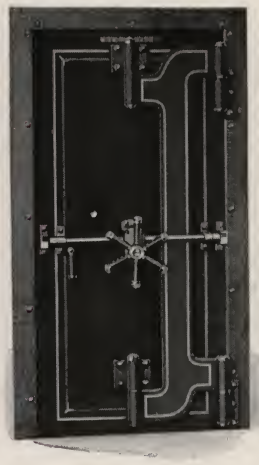
Printed drawings showing the masonry openings for all vault doors will be furnished promptly upon request either directly by the company or through its representatives in over three hundred cities.

Height, width and depth of vestibule doors can be changed to meet special requirements. Insulated doors can be built special height and width, but otherwise in accordance with the specifications of Nos. 7832 and 7632. Insulated doors can also be built with vestibules and inside doors if required. In requesting quotations on either standard or special doors, please send full information concerning height, width and depth of wall opening available and the clear height and width required for passage through the vestibule.

Light Door with Crane Hinge

Vault door No. 28 will be furnished with the certified relocking device.

Manufacturer's Specifications—*No. 28*—Trim 86⅛ in. high, 44 in. wide. Wall opening, 81⅝ in. high, 34 in. wide, 20 in. deep. Clear opening through vestibule, 78½ in. high, 28½ in. wide. Inside doors will pocket in vestibule 18 in. deep. Thickness of door plate ½ in. Twelve bolts 1-in. diameter as shown on illustration. Weight, approximately 1500 lbs. Door hung on gooseneck crane hinge with single horizontal pressure system. Six-spoke pilot wheel. Moulding bars 4⅞ in. wide.





No. 28

Fur Vault Doors

These doors have been specially designed to meet the burglary insurance requirements for Class E and Class D vaults respectively:

Manufacturer's Specifications—*No. 697*—This door is of solid steel 3 in. in thickness. Outside dimensions of vestibule, 80 in. high, 32 in. wide, 13¾ in. deep for a finished concrete wall 12¾ in. thick. Clear opening, 78 in. high, 30 in. wide. When used in reinforced concrete wall 12 in. thick or with ½-in. steel lining this door meets the requirements of the current insurance manual for a Class E mercantile rating.



Fur Vault Door for Mercantile Uses

The door is locked in position by means of eight bolts, 1¼-in. diam., and by three locking dogs at the rear. Bolts checked by one four-tumbler combination lock *with relocking device, certified by Underwriters' Laboratories, Inc.—10% deduction from burglary insurance premiums for this device.* Door hung on ball bearing pin hinges with pressure handle at front. Weight, 3270 lbs.

Vestibule may be fitted with polished or nickelplated moulding bars. Inside doors will be furnished if required. Depth of vestibule and height and width of door may be varied as required.

No. 696—This door is like No. 697 except in the following particulars: solid thickness of steel, 1½ in.; bolts, 1⅛-in. diam.; weight, 2200 lbs. Built for 9-in. wall with Class D rating.

Automatic Door Closer

Records in a vault are secure only when the door is closed. Convenience usually demands that during business hours the door be left open. A Herring-Hall-Marvin vault door, fitted with an emergency closer, will be automatically *shut and fastened* by the rising heat of the building fire long before the temperature has reached the danger point. This device is approved by the Underwriters' Laboratories, Inc. It has a special "hold open" arm connected by means of a fusible link which is released long before the fire can reach the vault. Film vaults, chemical vaults in laboratories, and supply vaults where combustible or explosive materials are stored—all demand the self-closing door.



Left: **Closed**

Right: **Open**

NIGHT DEPOSITORIES

Rotary Depository

The Rotary Night Depository consists of the following:

(1) A cast manganese bronze cylinder and housing which may be set at any convenient point. The cylinder and housing are of torch-proof manganese bronze. The cylinder is rotated by the opening of a bronze door on the face-plate and both cylinder and door are checked by a drillproof paracentric key lock.

(2) A heavy steel chute of ample size through which the bag is dropped from the cylinder entrance to the night safe inside the building.



Auxiliary Door

(3) The night safe, which will be made any size to meet the needs of the user. The safe body is made 1-in. in thickness to comply with the requirements for a Class B insurance rating, and both safe and chute are required to be incased in reinforced concrete. The cast steel front of the safe, and the circular cast steel door, are drillproof and are 3½ in. in net thickness.



Accessories

Canvas bags with zipper tops and Yale paracentric key padlocks are supplied in quantity as desired.

Bronze electric light housing with glass front may be substituted for name plate.

Auxiliary door, as shown on the illustration, will be supplied if desired.

This door insures against the possibility of bags being deposited and left in the cylinder as the cylinder must be clear and the door closed before key can be withdrawn.

Electric protection for connection with the bank's burglar alarm system.

Circular Depository

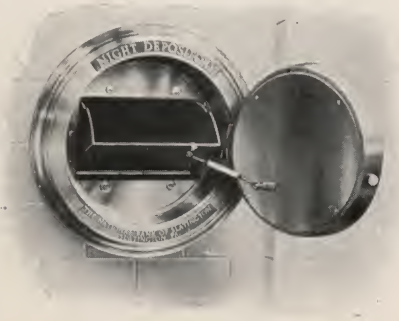
This entrance consists of a cast bronze front 20⅜-in. diameter with heavy door 2-in. thick.

This door is a torch-resisting bronze casting, containing layers of drillproof steel.

A drillproof paracentric key lock is used.

The bronze door automatically opens the inner steel receptacle which rotates in a 1-in. steel housing.

The circular depository takes a Class B insurance rating.



Night Depository with Circular Face Plate

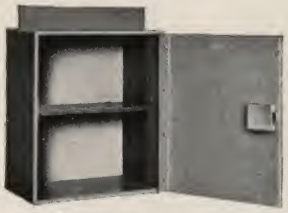
WALL SAFES



Wall Safe No. 2

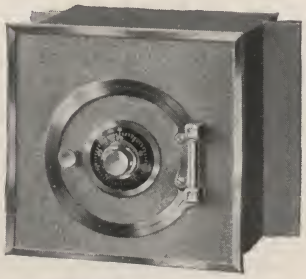
No. 1 and No. 2—These wall safes have solid cast bodies with inside measurements as follows: *No. 1:* 6¾ in. high by 10¾ in. wide by 7⅛ in. deep. *No. 2:* 9¾ in. high by 14¼ in. wide by 7⅛ in. deep. Both with doors with turning lugs and combination locks.

No. 42—13½ in. high by 11 in. wide by 7 in. deep inside with ½-in. steel door locked with either key or combination locks as required.



Wall Safe No. 42

No. 43—A welded steel box with ⅛-in. body; ¼-in. cast bronze front containing a circular door. Body 8 in. high by 8 in. wide by 6 in. deep. Clear opening through door—5 in. diameter. Door locked by combination. Finish of door and front is natural bronze with raised surfaces polished bronze.

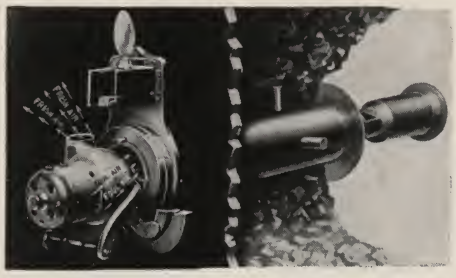


Wall Safe No. 43

VAULT VENTILATOR

Bank vaults are always a menace to those who, either by accident or design, are unfortunate enough to be locked within their airtight walls.

The vault ventilator, with fan, eliminates every possible danger of suffocation, and reduces to a minimum, the mental hazard of imprisonment within a vault. 22 in. by 10 in. wall space required for vault ventilator.





Filing Safe—Class B and T-20 Labels

CERTIFIED FIREPROOF FILING SAFES

Safes

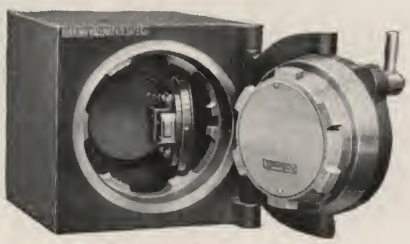
Twenty-nine sizes of labeled safes are furnished with either A or B labels of the Underwriters' Laboratories, Inc.

Herring-Hall-Marvin filing equipment is fully adjustable and interchangeable and is made in all standard sizes.

All label safes bear the *T-20 insurance label.*

Burglarproof Chests

Herring-Hall-Marvin burglarproof chests comply with specifications for Class H bank burglary rate and Class E mercantile rate. *They have inspected relocking devices with the label of the Underwriters' Laboratories, Inc., carrying 10% reduction from insurance premiums.*



Chest with Inner Door

YORK SAFE AND LOCK COMPANY

Manufacturers and Builders of the World's Greatest Vaults

FACTORY AND HOME OFFICE

YORK, PA.

NEW YORK, N. Y., 55 Maiden Lane
BALTIMORE, MD., 7 W. Redwood Street
BOSTON, MASS., 98 Sudbury Street
PHILADELPHIA, PA., 711 Chestnut Street
SEATTLE, WASH., 112 Third Avenue, So.
HONOLULU, HAWAII
ST. LOUIS, MO., 408 North 4th Street
SAN FRANCISCO, CAL., 200-218 Howard Street
NEW HAVEN, CONN., 273 State Street
HOUSTON, TEX., 1120 Main Street
CHICAGO, ILL., 217 W. Monroe Street
PARIS, FRANCE
HAVANA, CUBA
CLEVELAND, OHIO, 109 E. St. Clair Avenue
WASHINGTON, D. C., 410 Bond Building
LOS ANGELES, CAL., 914 Towne Avenue
INDIANAPOLIS, IND., 44 E. Washington Street
MONTREAL, QUE., 830 St. James Street, West
TOKYO, JAPAN
SHANGHAI, CHINA

York Products

BANK VAULT EQUIPMENT; SAFE DEPOSIT BOXES; BOOK and STORAGE VAULT DOORS; SAFES bearing Underwriters' Fire Labels and T-20 Labels; CHESTS bearing Underwriters' Relocking Device Labels and X-60 Labels.

We have complete catalogues on the different products we manufacture. Write for your copy.

York Underwriters' Label Vault Door



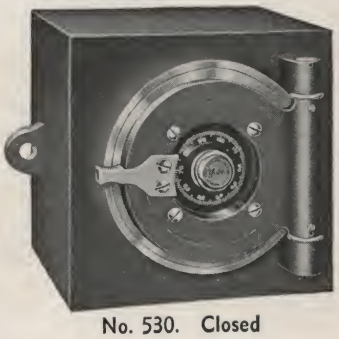


No. 7632½—With flat sill
No. 7632-1—With flat sill
No. 7632-2—With flat sill
No. 7832-4—See note
No. 7832-6—See note
No. 7840-2—Double door with flat sill

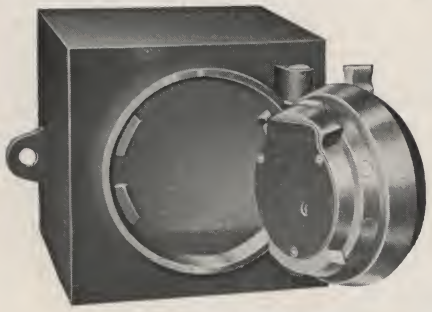
Note: These doors supplied with inclined foot bridge.

No. 530 York Wall Chests

Chest		Dimensions, in. Height	Width	Depth
No. 475	Outside	10	10	15 13/32
	Inside	8	8	11 5/8
No. 480	Outside	14	14½	14 15/16
	Inside	12	12½	10 5/16
No. 530	Outside	8½	8½	8¾
	Inside	7½	7½	5⅞
No. 531	Outside	8½	13	8¾
	Inside	7½	12	5⅞



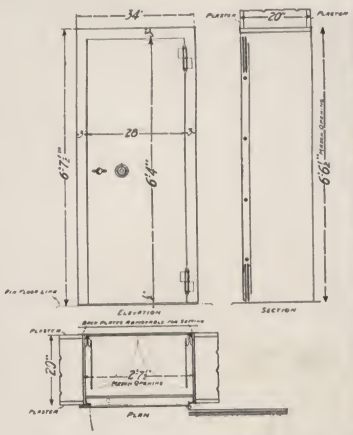
No. 530. Closed

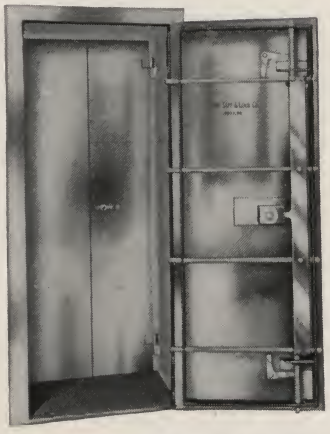


Left:
No. 530. Open

Specifications York No. 402 Vault Door

The contractor shall furnish and set in position York No. 402 Vault Door to fit wall opening 78½ in. high, 31½ in. wide.





Doors—*Outer*—Of ⅜-in. steel plate, reinforced inside on all edges by 2x2x⅜-in. steel angles. *Inner*—Of ⅛-in. annealed steel plates, opening into vestibule and checked by boltwork and key lock.

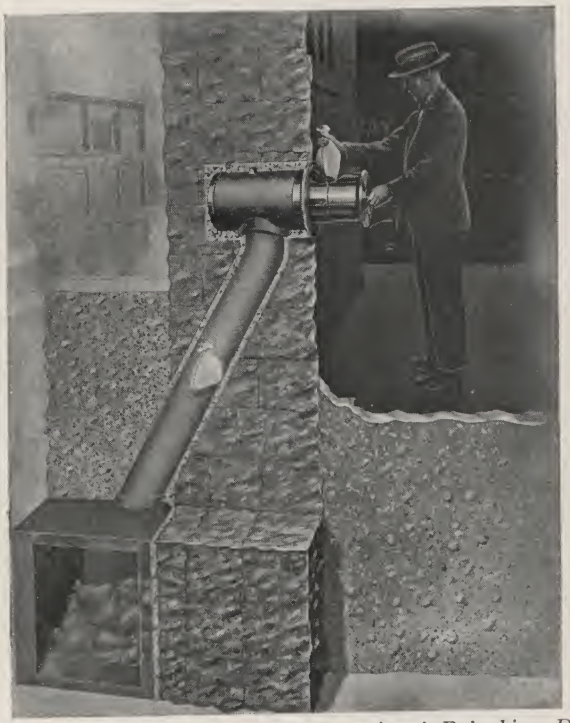
Boltwork—Frame formed by angles which strengthen door on all edges. Bolts of cold drawn steel, each 1-in. diameter, 4 across, 1 up and 1 down, operated with T-handle and checked by one 3-tumbler combination lock.

Frame—Surrounding outer door of 3x¼-in. flat steel bars welded at upper corners and securely fastened to vestibule by 1½x1½x¼-in. steel angles. Frame surrounding inside door to be made of 3x⅜-in. steel bars and shall be removable so door may be set after walls are completed.

Vestibule—Of No. 16 annealed steel plates fastened at corners by 1¼x1¼x⅜-in. steel angles.

Finish—Doors rich olive green color. Handles, hinge tips, locking bolts, etc., polished and heavily nickelplated.

York Night Depositories



Fireproof and Burglarproof Safes and Chests bearing Underwriters' Laboratories Labels and Underwriters' Relocking Device

AMERICAN DISTRICT TELEGRAPH COMPANY

Central Station Protection Services and Electric Signaling Systems

155 Sixth Avenue, NEW YORK, N. Y.

For other A.D.T. Central Station and Proprietary Systems with List of Central Stations, see Manufacturers' Index

PHONETALARM—A.D.T. BANK VAULT PROTECTION SYSTEMS (APPROVED GRADE A)

A.D.T. Phonetalarm—the original sound detection system for vaults—is effective against attack by means of hammering, drilling, burning or explosion. Sensitive microphones installed on the ceiling of the vault give immediate alarm at A.D.T. Central Stations in case of attack. Vault door and bolt contacts provide for supervision of the opening and closing of the vault.

Used extensively by the Federal Reserve and scores of leading banks. Listed by Underwriters' Laboratories, Inc. as Grade "A."



A.D.T. Holdup Alarm Systems

A complete system of hand, foot, door and miscellaneous devices wired to A.D.T. Central Station (see Manufacturers' Index for Bankers Electric Protective Assn.) or local audible signal, giving instantaneous alarms in case of daylight attacks.

The Inside Story of Bank Protection

A new booklet, gives complete information on Phonetalarm, Holdup Alarm System, and Watchman's Compulsory Tour System for banks. Copies furnished to architects on request.

SPECIFICATIONS

(Do not include any matter in brackets in writing specifications.)

(1) Scope of Contract—These specifications contemplate the furnishing of all labor, equipment and miscellaneous material, except conduit, necessary to the complete installation of a standard central office bank vault burglar alarm system, as manufactured by the AMERICAN DISTRICT TELEGRAPH COMPANY. The system as installed shall protect fully, by means of sound-sensitive detectors located within the vault(s), the walls, ceiling(s), floor(s), and door(s) of vault(s). The system shall be connected to the central office of the electric protection contractor and shall register an alarm at the central office in the event of attempted entry to the vault(s).

The electric protection contractor shall furnish the owner, upon completion of the installation and execution by the owner of the contractor's standard agreement form for maintenance service, an Underwriters' Laboratories' Grade "A" certificate, as evidence of the contractor's full compliance with the central office bank vault burglar alarm standard of Underwriters' Laboratories, Inc.

The equipment to be supplied shall include:

(2) Switch Control Set—[4½ in. wide, 6⅜ in. high, and 2¾ in. deep.]

The switch control set shall be installed outside the vault, closely adjacent to the main vault door. This unit shall house in a satin nickel finished cabinet, the following:

(a) A day and night switch for transferring protection from day to night condition.

(b) A resistance unit for balancing the day protection circuit.

(c) Terminal and distribution block for interconnection of units.

(d) A signaling device for exchange of signals with the central office.

(3) Vault Units—There shall be located inside the protected vault three satin nickel finished cabinets [each 10⅝ in. high, 5¾ in. wide, and 4¾ in. deep], housing the following:

(a) Relays for the transmission to the central office of signals received by the sound-sensitive detectors.

(b) Instruments for simulating an alarm condition within the vault for a periodic test of the equipment from the central office.

(c) Balancing resistances for the compensation of circuits together with terminal facilities for the interconnection of units and distribution of circuits.

(4) Vault Protection—The vault structure shall be protected by sound detectors mounted on the vault ceiling. A minimum of two detectors shall be supplied in each vault and one additional detector shall be supplied for each 400 sq. ft. of vault floor area above 800 sq. ft.

Sound detectors shall be of the electro-microphonic type and shall be adjusted to initiate an alarm as the result of an attack at any point on the vault structure, or as a result of noise coincident with cutting by means of an oxy-acetylene torch, but shall not initiate an alarm as the result of external noises not affecting the vault structure.

(5) Vault Door Protection—In addition to the sound detectors, there shall be supplied special contact devices controlled by the door and draw bolts of the door, to initiate an alarm as the result of a noiseless opening of the door itself.

(6) Local Power Supply—An electrolytic rectifier and charging unit shall be supplied, together with a local storage battery for the supply of energy to the secondary protection circuits. This unit shall be housed in a steel cabinet located in the basement of the bank and near the 110-volt alternating-current service entrance. [Where alternating current is not available, the contractor shall supply a special direct-current charging unit, similarly housed.]

(7) Conduit—All conduit and outlet boxes required for the system shall be furnished and installed by the purchaser unless otherwise specified. The electrical protection contractor shall furnish necessary drawings to indicate the location and sizes of conduits and boxes.

(8) Holdup Alarm Stations—Holdup alarm stations as follows:

..... Hand Stations
..... Foot Push Buttons
..... Foot Rails
.....

shall be installed together with the necessary transmitting equipment. Holdup alarm stations shall be arranged to transmit a distinctive signal to the central office when actuated.

(9) Night Depository Protection—Complete protection shall be afforded the night depository by lacing the chute sides, top and bottom of the chest with approved lead encased lacing wires, and lining the head in double protection circuits, spaced not more than 3 in. apart. The door shall be protected by an electrically lined cabinet front covering the entire front of the chest.

(10) Workmanship—All equipment shall be installed in a workmanlike and fully finished manner, and shall be turned over to the owner in a fully operative condition.

(11) Service—The contractor shall present for signature by the owner upon completion of the installation and connection to the contractor's central office, a contract form covering operation, protection, inspection, and maintenance service.

BANKERS ELECTRIC PROTECTIVE ASSOCIATION

Local Bank Vault Alarm Systems

60 State Street, BOSTON, MASS.

SYSTEMS INSTALLED AND MAINTAINED THROUGH 115 A.D.T. OFFICES THROUGHOUT THE COUNTRY

Products

ALARM SYSTEMS for banks, designed to ring a loud-sounding alarm on exterior of building if vault is tampered with or an attempt made to hold up the bank. The system is rated Grade A by Underwriters' Laboratories, Inc.

Specifications

Complete specifications for the installation of all types of BANKERS ELECTRIC PROTECTIVE ASSOCIATION alarm systems will be furnished on application to the company at 60 State Street, Boston, Mass.

Organization and Service

Founded over 25 years ago, this organization's protection systems are used by thousands of banks throughout the country including many Federal Reserve Banks. It is now affiliated with the American District Telegraph Company, through whose offices its products are installed and serviced.

Layouts and sketches gladly furnished to architects and owners gratis.

Vault Burglar Alarm System

Either through pickproof cables embedded in the vault itself, or through sound detectors placed within the vault, any attempt to gain entrance to the vault outside of banking hours immediately initiates a loud alarm on the exterior of the building.



Surface Type Vault Alarm Housing



Flush Type Vault Alarm Housing

Holdup alarm devices can be connected to the system so that, in the event of an attempted holdup, operating one of the devices sets the alarm system in operation.

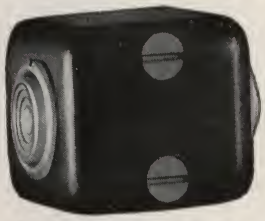
In new banks either or both systems can be installed. In old banks only the sound detection system can be installed.

With both systems special electrical lining thoroughly protects the vault door against attack by the oxy-acetylene torch.

It is worthy of note that in over 25 years' experience with these systems not one instance of their failure in an emergency has ever been recorded.

Holdup Alarm Protection

This organization supplies a varied line of daylight holdup alarm devices, including hand switches, foot push buttons, foot rails and semi-automatic devices which make it possible to give the alarm by simply obeying the commands of the bandits. These may be operated to sound an alarm in nearby stores and the nearest police station, or may be connected to the Vault Alarm to sound an alarm bell on the outside of the bank building.



Double Push Hand Station



Foot Push Button

Details of Operating Equipment

The vault protection equipment includes a control cabinet located in the vault itself. This has a time clock which is wound each night and set for the number of hours the vault is to remain closed. An indicator panel on the outside of the vault carries two meters and push button switches for applying the protection to the system. In the sound detection system means are provided for testing the sound detectors after the vault is closed.

Special pickproof cable used in the embedded cable system is a unique feature. Use of this cable makes it impossible to pick out or isolate any single conductor for the purpose of defeating the system electrically, without causing an alarm.

Sound detectors operating on the principle of microphones are designed to cause an alarm upon receipt of sound waves caused by a series of impulses or a single heavy impulse due to an attack on the vault. They are designed to prevent unnecessary or false alarms, but are capable of initiating an alarm upon any disturbance sufficient to cause entrance to the vault.

Vault alarm housings for the exterior of the bank are supplied in either surface type (projecting from the wall), or flush type (embedded in the wall). Both are ruggedly constructed to resist tampering.



Indicator Panel
Mounted on outside of vault. Includes push button for applying protection at night



Sound Detector
Standard finishes: French gray and telephone black. Other finishes special

Vault Ventilators

In case of attack by bandits who imprison employees in the vault, or in case of accidental closing of vault door on employees or customers, and to ventilate vault during business hours, this vault ventilator has proved indispensable. It provides fresh air and expels foul air at the same time. It has an effective burglar alarm hookup and a light.

The "Bankers" vault ventilator can be installed in any vault, old or new. Installation does not weaken structure. Device has full approval of insurance companies and does not prejudice existing rate. Three models available. Literature on request.



THE BANK VAULT INSPECTION CO.

SAMUEL P. YEO, President

Day and Night Depositories for Banking Institutions

(Systems Patented and Copyrighted)

MAIN OFFICE
5 South 18th Street, PHILADELPHIA, PA.
NEW YORK OFFICE, 175 Fifth Avenue CHICAGO OFFICE, 6 North Michigan Avenue
SALES ENGINEERS IN ALL OF THE PRINCIPAL CITIES

"Yeo—The Original Rotary" Night Depository

The "Yeo Rotary" Night Depository is now in continuous service in over 1275 United States and foreign banks. Adopted and used by largest chain banks in America. Fully guaranteed.

General Details—Types to meet all requirements.

Simple in operation.

Strong and safe because of "Rotary" design (patented).

Massive in construction.

Beauty and refinement in design.

No sensitive or auxiliary devices used.

No upkeep cost. Nothing to get out of order.

Electrical protection (optional).

Low Insurance Rates

Entire "Yeo" equipment carries the lowest insurance rates. Approved by Underwriters' Laboratories, Inc.

Service

Architects and bankers are invited to consult with us. Full information submitted without obligation.



Universal Model Entrance

(For banks with limited budget)
Weight—400 lb.
Face plate—statuary bronze, 18½ in. high, 21½ in. wide
Letters—1¼-in. raised cast bronze or Tiffany illuminated
Cylinder—bronze with electric steel centers
Housing—electric steel

DeLuxe Model Entrance

Standard
(With full protection for average banks)
Weight—750 lb.
Face plate—statuary bronze or stainless steel, 18½ in. high, 21¾ in. wide
Letters—1¼ in. raised cast or Tiffany illuminated
Cylinder—cast bronze or stainless steel with electric steel centers
Housing—electric steel
Insurance—lowest rate "B" classification
Electric protection—provision for electric-protection companies to apply their system





Victory Model Entrance

The Super Model
(For large banks who buy heavy equipment)
Weight—1000 lb.
Face plate—statuary bronze, 21½ in. high, 21½ in. wide
Letters—1¼ in. raised cast or Tiffany illuminated
Cylinder—cast bronze. Extra heavy walls, 3 in. minimum thickness
Housing—electric steel
Insurance—very lowest rate; "B" classification
Electric protection—provision for electric-protection companies to apply their system



Victory Model—Very Large Bag Capacity—Wall Installation

Yale key opens rotary. A slight pull on cylinder will rotate it to open position



Window Installation—Rotary Cylinder in Open Position

Depositor placing sealed bag in cylinder



At left:

Receiving Chest No. 72N—Burglarproof Latest Design

Weight—1800 lb.
Size—30 in. high, 28 in. wide, 27 in. deep
Body—1 in. thick
Door—3 in. solid thickness
Bolts—6, 1-in. diam.
Locks—Yale 025½ combination; Yale dual control dial lock
Electric protection—cavity left in door for electric-protection companies to apply their liners
Antidynamite device—applied to bolt work procures extra 10% insurance reduction
Time lock—2-movement Yale time lock can be applied if desired

Important

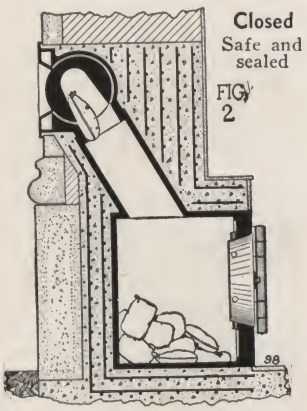
Only in the "Yeo Rotary" are the deposits in the receiving chest *continuously* sealed with uniform amount of metal against attack.

Maximum protection is assured in any position of rotary cylinder.

"It's in the Rotary"



FIG 1 **Open** Safe and sealed



Closed Safe and sealed

FIG 2

When It Is Opened It Is Sealed

VOGEL-PETERSON CO.

Manufacturers of Peterson Checkroom and Wardrobe Equipment

1801 North Lincoln Street, CHICAGO, ILL.

Products

PETERSON ALL-STEEL CHECKROOM and WARDROBE EQUIPMENT for clubs, hotels, leagues, association buildings, auditoriums, theaters, museums, churches, schools, banks, stores, offices, hospitals, etc., consisting of Stationary and Portable Floor and Wall Racks; Overshoe, Umbrella and Baggage Racks; Racks for Bathhouse Checkrooms; a complete line of Closet Equipment and Costumers.

T. M. Reg. U. S. Pat. Office

The Peterson One-check Checking System

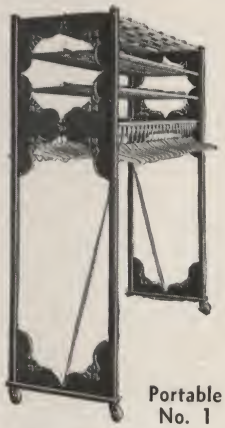
Advantages—Unlike any other checking system the Peterson One-check Checking System increases speed, eliminates errors and utilizes any given space to provide the greatest capacity. Coats, hats, packages, umbrellas, canes, overshoes are taken care of quickly and accurately with the least possible expenditure of space or effort.

Operation—Each coat goes on its own hanger where it is held in shape; it is not subjected to the damaging results of sagging on an ordinary hook. Each hat has its correspondingly numbered section above the hanger. Canes, umbrellas, rubbers, overshoes or luggage are disposed of with equal care by means of systematically numbered umbrella, overshoe and baggage racks.

Regardless whether one or all of the above items are checked, it is only necessary for the guest or patron to be given one check which identifies every item. Only the Peterson One-check System offers this remarkable service.

Service

Our long experience in solving checkroom problems fits us to plan arrangements which will insure the greatest all-round efficiency. We will gladly sumbit to architects, gratis, blue prints indicating the most practical checkroom arrangements. Complete catalogue describing the Peterson system and equipment sent on request.



Portable No. 1

Capacity 48 coats and hats. Length 6 ft. Width 2 ft. Height 6 ft. 7 ins. Quickly assembled or dismantled. Stores in 2 sq. ft. of floor space



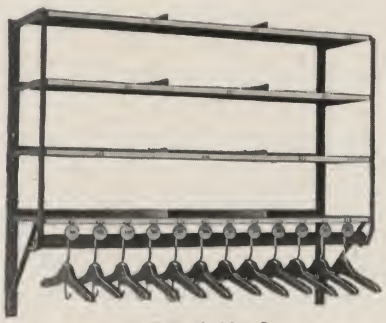
Umbrella Rack No. 4

Height 36 ins. Width 1 ft. Length 1 ft. 6 ins. and up. Capacity 16 umbrellas to each 1 ft. length. Drip pan has pet cock for draining

Wall Rack No. 3F

Length 3, 4, 5 and 6-ft. sections. Height 6 ft. 7 ins. Width at base 1 ft. 6 ins. No. 9 Portable same as above 6 ft. long with casters





Wall Rack No. 3

Length 3, 4, 5 and 6-ft. sections. Width 12 ins. Height installed 6 ft. 7 ins.

Specifications and Construction Details

Frames—End and intermediate frames are interchangeable. They are of two-post construction. Posts are No. 18 gauge 1½ ins. square tubular steel. Cross arm shelf supports are No. 15 gauge channel-formed steel to receive ends of shelving. Bases—No. 14 gauge 2½ ins. x 1 in. x 2 ft. ¾ in. enclosed top and four sides, with reinforced welded corners. Bases also equipped with vacuum-cup rubber shoes, eliminating necessity for anchoring. All joints electrically welded. Embossed ornamental corner brackets for frames facing counters are optional.

Shelving—New style dust-free perforated and embossed one-piece steel shelving having ⅝ in. x ¾ in. x ⅛ in. hard steel angle reinforcement. Also to this is added a ½-in. steel channel for number strips. Hat dividers at one foot intervals embossed into shelving. Hat spacers have rear as well as side divisions. Coat hanger rail supported independent of shelving, thereby causing no undue strain to that portion of rack.

Wall Brackets—Similar in construction to end frames except having No. 3 gauge back supporting member. All connections electrically welded.

Throughout entire construction of all parts, there are no welded joints that will receive a shearing strain.

Capacity—8 coats and 8 hats per lineal foot of floor type rack. 4 coats and 4 hats per lineal foot of wall type rack.

Hangers—One-piece hardwood hanger. No. 10 hard steel rustless wire. Auxiliary hook below.

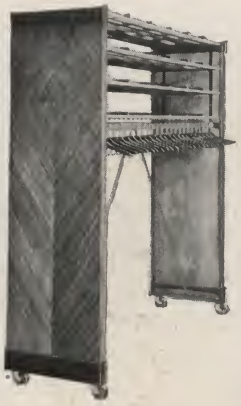
Numbering—Large, clear, and legible numeral impressed into white fibreloid.

Hardware—All hardware cadmium plated. Shakeproof washers for all bolted connections.

Finish—Two coats mahogany-walnut brown enamel. Any other color by request.

All equipment furnished complete ready for use.

Peterson Checking System is fully protected by U. S. Patent.



Left:

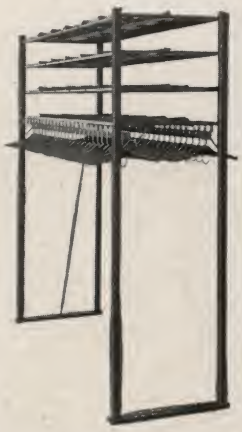
Portable Rack No. 8

Same as No. 1 with wood panel ends furnished in walnut, mahogany, or oak. Wood panels can also be furnished for stationary floor or wall racks

Right:

Floor Rack No. 2

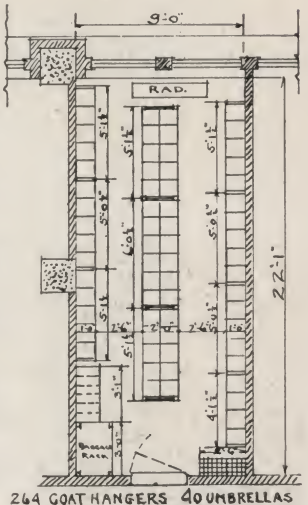
Length 3, 4, 5 and 6-ft. sections. Height 6 ft. 7 ins. Width 2 ft. Frames facing counter furnished with embossed steel ornamental corner brackets as illustrated on Portable No. 1. Optional.



Leading Buildings Everywhere Use Peterson Checkroom Equipment

Below are listed a few prominent installations made during 1932:

Milwaukee County Court House, Milwaukee, Wis.
Department of Commerce Bldg., Washington, D. C.
Newton City Hall & War Memorial, Newton Centre, Mass.
State Capitol Bldg., Baton Rouge, La.
State Capitol Bldg., Charleston, W. Va.
State Office Bldg. No. 2, Harrisburg, Pa.
Japanese Embassy, Washington, D. C.
Children's Memorial Hospital, Chicago, Ill.
Cornell Medical Centre, New York, N. Y.
Radio City, RKO Theatre Bldg. No. 8, New York, N. Y.
Radio City, RKO Theatre Bldg. No. 10, New York, N. Y.
River Club, New York, N. Y.
International House, Univ. of Chicago, Chicago, Ill.
Ohio State University, Natatorium, Columbus, Ohio
Eastern Senior High School, Lynn, Mass.
Univ. of Michigan, Legal Research Bldg., Ann Arbor, Mich.
Joslyn Memorial Bldg., Omaha, Neb.
Folger-Shakespeare Library, Washington, D. C.
Enoch Pratt Library, Baltimore, Md.
Severance Hall, Cleveland, Ohio
First Church of Christ, Scientist, Long Beach, Cal.
First Church of Christ, Scientist, Des Moines, Iowa
Old South Church, Boston, Mass.
Higbee Department Store, Cleveland, Ohio
Cincinnati Union Terminal, Cincinnati, Ohio



THE LIQUID CARBONIC CORPORATION

Manufacturers of Luncheonette Equipment and Soda Fountains

3100 South Kedzie Avenue, CHICAGO, ILL.

BRANCH OFFICES

MILWAUKEE, WIS.
DETROIT, MICH.
CHICAGO, ILL.
INDIANAPOLIS, IND.
DENVER, COLO.
MINNEAPOLIS, MINN.
PITTSBURGH, PA.
CINCINNATI, OHIO
CLEVELAND, OHIO
LOUISVILLE, KY.
BUFFALO, N. Y.
PHILADELPHIA, PA.
NEW YORK, N. Y.
NEW ORLEANS, LA.
HAVANA, CUBA
HARRISBURG (HIGHSPIRE), PA.
BOSTON, MASS.
ATLANTA, GA.
JACKSONVILLE, FLA.
DALLAS, TEX.
NASHVILLE, TENN.
KANSAS CITY, MO.
PORTLAND, ORE.
ST. LOUIS, MO.
MEMPHIS, TENN.
NORFOLK, VA.

CANADIAN CARBONATE, LTD.

MONTREAL, QUE.
DARTMOUTH, N. S.
VANCOUVER, B. C.
TORONTO, ONT.
HAMILTON, ONT.
WINNIPEG (ST. BONIFACE), MAN.
EDMONTON, ALTA.

LIQUID CARBONIC PACIFIC CORPORATION

LOS ANGELES, CALIF.
SAN FRANCISCO, CALIF.
SEATTLE, WASH.

LIQUID CARBONIC PRODUCTS, SERVICES AND FACILITIES

Products

COMPLETE LUNCHEONETTE INSTALLATIONS, including Kitchen Equipment and Luncheonette Equipment.

SODA FOUNTAINS and SODA FOUNTAIN EQUIPMENT. Also Soda Water Carbonators.

The Company

THE LIQUID CARBONIC CORPORATION has been manufacturing soda fountains and fountain equipment for more than thirty years. Throughout its history this organization has maintained a policy of pioneering research.

The Company maintains a large engineering staff whose specialized experience gained through planning installations for such well-known chains as Liggett, Interstate, Kresge, McCrory, Metropolitan, and many others makes them unusually well equipped to plan luncheonette layouts to meet all requirements with maximum efficiency.

Architectural Consulting Service

With headquarters in most of the populous centers of the country, the Company is in close touch with the luncheonette business and knows its needs.

Its representatives are experts in luncheonette and soda fountain equipment, and are always ready to assist architects in planning, specifying, and selecting the correct units. A competent engineering staff at the headquarters office is ready at all times to furnish special plans for luncheonette or fountain layouts to architects—without charge.

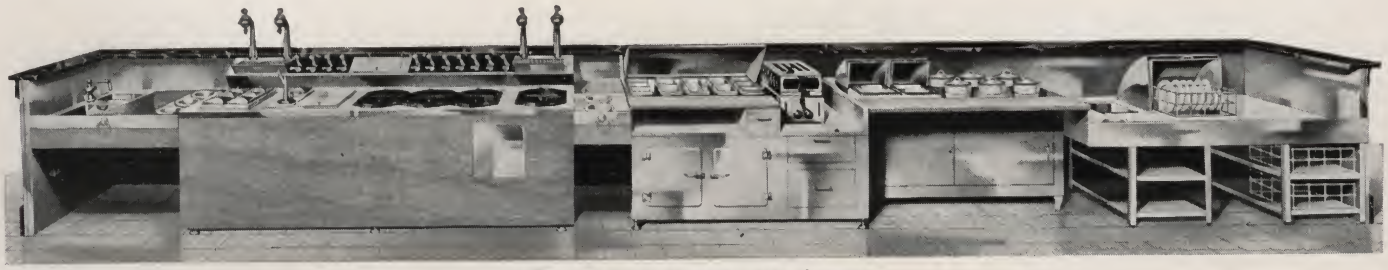
Production Facilities

The facilities of THE LIQUID CARBONIC CORPORATION are unsurpassed for large scale production of luncheonette equipment, being the largest manufacturers of this equipment. This results in economy of manufacture and speed in getting the job done. As an example, a job recently completed for the Merchandise Mart, Chicago, Illinois, had over 750 feet of counter space. Few other manufacturers could attempt to handle a job of this size.



Part of The Liquid Carbonic Corporation's Soda Fountain Engineering Department

LUNCHEONETTE EQUIPMENT



A Typical 30-ft. Luncheonette Layout

The Elements of Luncheonette Equipment

Modern luncheonette equipment consists of two primary units: a counter, or front service bar; and a rear service bar, or back bar. The front bar usually includes one or more fountain cooler boxes, workboards with basins and running water, a refrigerated salad section, and a toaster section. In addition, a dishwashing machine is sometimes included.

In the back bar is a series of open shelves for clean dishes, a plain compartment with doors for supplies, a steam table and an urn stand. Pie racks and a refrigerator section are usually included in the back bar base.

These, in a general way, are the elements of luncheonette but they are subject to considerable variation depending upon the size of the installation and individual requirements.

Variety of Stock Units to Select From

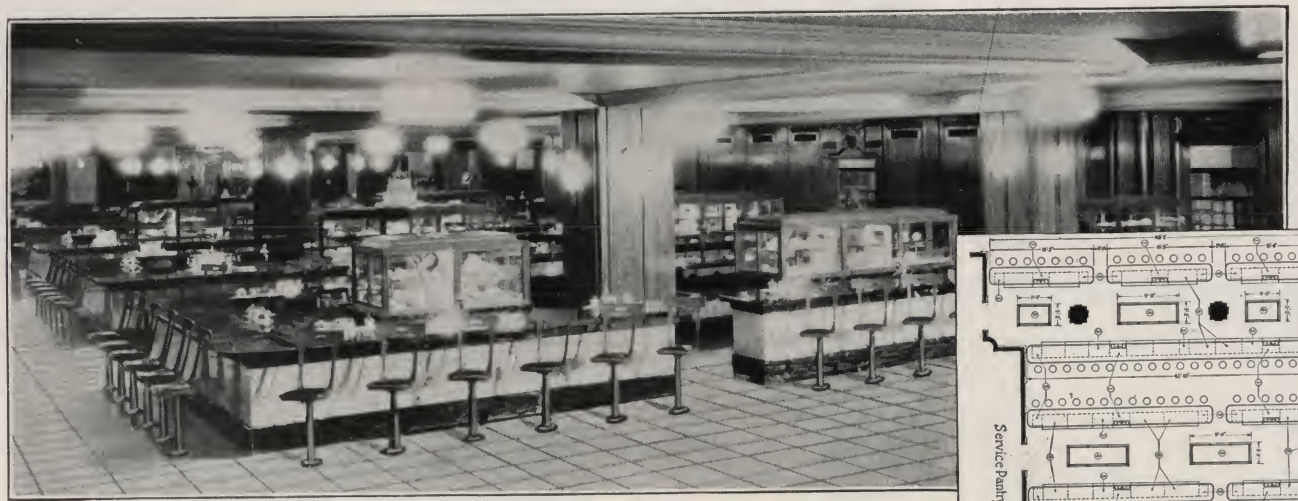
The most successful principles of the numerous installations that have been planned by this organization have been combined in a series of stock units, which include cooler boxes, mechanically refrigerated salad cabinets, toaster stands, workboards, steam tables, urn stands, pastry cases, dishwashers and special units of various types. These units are described and illustrated in a comprehensive Luncheonette Catalogue which will be sent free to architects on request.

Complete Installations

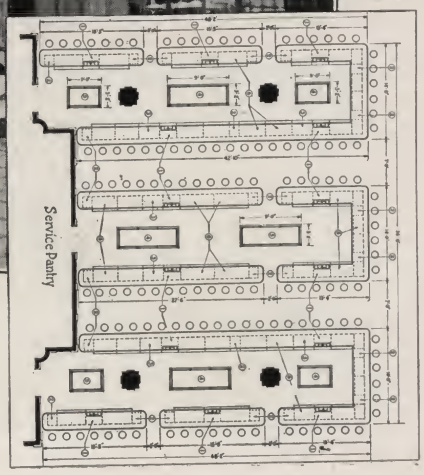
With stock units as a basis, an outfit to meet almost any requirement can be assembled at a very moderate cost and, where special equipment is required, "Liquid" is in position to supply it economically. No job is too large for The Liquid Carbonic Corporation's facilities and none too small to merit their most thorough attention to details.

Luncheonette Accessories

"Liquid's" line of luncheonette accessories includes fountain stools in designs to harmonize with various types of installations; coffee urns; grills; waffle bakers; display cases; toasters; malted milk dispensers; and mixers, fruit juice extractors, etc.



One of the Installations at the Cleveland Union Terminal, Cleveland, Ohio



In the new $200,000,000 Cleveland Union Terminal are six "Liquid" luncheonette and fountain installations. In addition to the installation in the Lunch Room (illustrated above), there are installations in the Sandwich Shop, the Tea Room, the Drug Store, Candy Shop and a fountain in the West Concourse.

The plan of the Lunch Room installation is shown at the right.

This is an adaptation of a bay type counter. The bays are unusually deep and all service units are in an enclosed pantry. Usually some or all of these units are a part of the installation itself. Seating capacity, 136

THE ALUMINUM COOKING UTENSIL CO.

NEW KENSINGTON, PA.

BRANCH OFFICES

BALTIMORE, MD., 608 Lexington Building
BOSTON, MASS., 1025 Statler Building
CHICAGO, ILL., 111 West Washington Street
CLEVELAND, OHIO, 962 Hanna Building
KANSAS CITY, MO., 1345 Dierks Building
MINNEAPOLIS, MINN., 700 First National-Soo Line Building
NEW YORK, N. Y., 393 Seventh Avenue
OAKLAND, CAL., 45th and Adeline Streets
PHILADELPHIA, PA., 1306 Commonwealth Title & Trust Co. Building
PORTLAND, ORE., 601 Board of Trade Building

Products

"Wear-Ever" Aluminum Steam Jacketed Kettles and Urns; Range Utensils.

The Company and Its Products

For 32 years The Aluminum Cooking Utensil Co. has manufactured and distributed "Wear-Ever" aluminum cooking utensils for use not only in homes, hospitals, hotels and on shipboard, but everywhere that cooking is done.

Constant advertising during these years has brought a recognition of the value of aluminum from housekeepers, chefs and stewards. Each year it has also secured the approval of an increasing number of architects.

WEAR-EVER
T.A.C. ALUMINUM U.C.O.
TRADE MARK
Reg. U. S. Pat. Off.

Advantages of Aluminum for Cooking Utensils

Lightness—Bulk for bulk, the weight of aluminum is about one-third that of iron or tin, three-tenths that of copper and one-quarter that of silver. This difference in weight means much in the hot, hurried conditions of most kitchens.

Heat Conductivity and Specific Heat—In heat conductivity, aluminum ranks twice as high as tin and three times as high as iron. In specific heat (heat retaining ability) aluminum outranks all commercial metals by a large margin. The combination of these two characteristics makes aluminum pre-eminently suitable for cooking. By its use an even cooking temperature is easily maintained. Aluminum vessels cook not only from the point under which heat is applied, but also from every other point where the utensil is in contact with the food.



Horn & Hardart Baking Co., New York, N. Y.

No Tinning Necessary—Aluminum never forms a poisonous compound with any food. It is therefore unnecessary to tin the surface of an aluminum utensil.

Economy and Durability—"Wear-Ever" utensils are good for years of continuous service. They are decidedly economical, for not only is there no tinning expense, but there is no time lost in sending out the utensils to be tinned. One large nationally known hotel put in a complete equipment of "Wear-Ever" at a total cost of $2300, and, according to their own statement, have saved $100 in tinning bills every month since the equipment was installed.

Sanitary Qualities and Non-absorption of the Surface—The metal used in "Wear-Ever" equipment is rolled under tremendous pressure, giving a sheet that is hard, dense, and smooth. It is easy to clean and, being non-porous, food will not penetrate the metal and later contaminate other foods cooked therein.

Special Consultation Services to Architects

At each of the branch offices listed above, there is a man who, through years of training and experience, is able to render valuable assistance to an architect in laying out kitchen equipments and in writing specifications.

These men are glad to render assistance when asked to do so.

Catalogue

A 52-page catalogue showing the complete line of jacketed equipment and range utensils will be sent promptly in answer to a request sent either to the home office or to any of the branch offices.

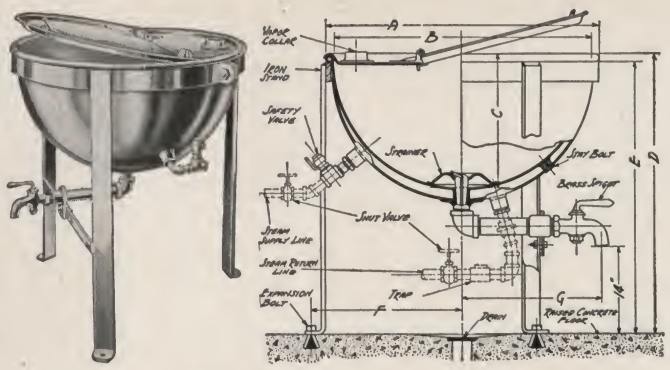


Georgetown University, Washington, D. C.

Three Typical Installations of "Wear-Ever" Kettles



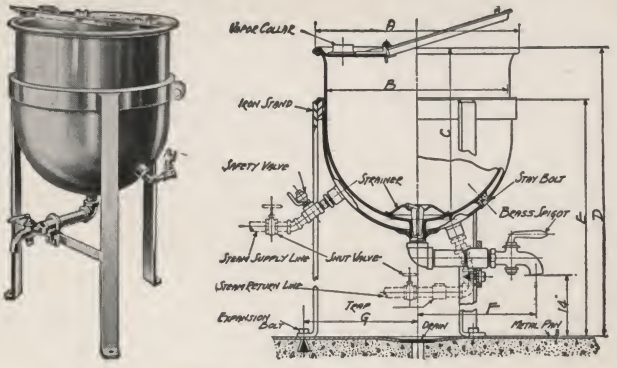
Federal Penitentiary, Atlanta, Ga.



Steam Jacketed Kettle Type 1

This kettle is jacketed to the top, insuring maximum results. Its uses are many and varied—roasting meat, canning and preserving fruits, etc. Being shallow and broad, it is ideal for cooking cereals of all kinds and dried fruits. The fruit is not crushed by its own weight as it would be in a deeper, narrower kettle. Kettles 125 gal. and larger, in addition to having the shells welded together, are reinforced with line of rivets

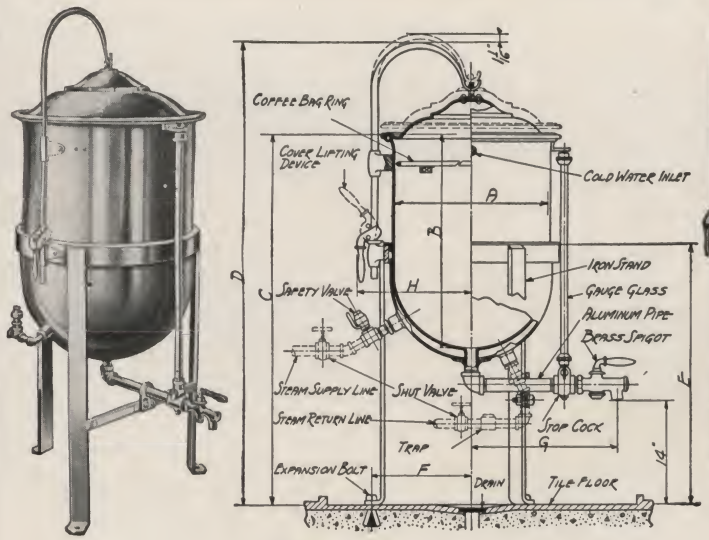
Dimensions of Type No. 1 Steam Jacketed Kettles												
Capacity in Gallons	5	10	15	20	25	40	50	60	75	100	125	150
A	18 1/2"	22 1/2"	25 3/8"	27 5/8"	29 3/4"	33 7/8"	38"	40"	42 1/8"	44 1/2"	50 1/8"	52 1/2"
B	17"	21"	24"	26"	28"	32"	36"	38"	40"	42"	48"	50"
C	8 1/16"	10 1/2"	12"	13 1/4"	14 1/2"	17"	18"	19"	21"	24"	24"	26"
D	28 1/8"	30 7/8"	32 3/8"	33 5/8"	34 7/8"	37 5/16"	39 1/2"	40 3/16"	42 3/16"	45 5/16"	46 7/16"	48 11/16"
E	28 1/8"	30 1/8"	31 3/16"	32 1/16"	33"	34"	36 1/16"	38 1/16"	39 1/16"	41 1/8"	43 1/16"	45 1/16"
F	10 3/16"	12 1/16"	13 1/16"	14 1/16"	15 1/16"	16 3/16"	18 1/8"	20 1/16"	21 1/8"	22 1/16"	25 1/16"	26 1/8"
G	12 1/4"	13 3/4"	14 7/32"	14"	15 5/32"	16 5/16"	18 5/32"	18 5/16"	19 5/16"	24"	28 5/16"	29 5/16"
Number of Legs	3	3	3	3	3	3	3	3	3	4	4	4
Number of Stay Bolts	—	—	—	—	—	—	—	3	3	3	3	3
Steam Inlet Size	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	3/4"	3/4"	1"
Steam Outlet Size	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	3/4"	3/4"	1"
Safety Valve Size	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	1"	1"	1"
Kettle Outlet Size	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/2"	1 1/2"	1 1/2"	2"	2"	2"
Vapor Collar Dia.	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	2"	2"	2"	2"	2"	3"	3"



Steam Jacketed Kettle Type 3

This kettle is jacketed two-thirds of the way up and offers maximum cooking capacity for the floor space occupied. It is particularly recommended for cooking delicate foods. Scorching is prevented by the evenness of the heat distribution and the ease in controlling the amount used. Foods and meat allowed to stand in "Wear-Ever" steam jacketed kettles will not darken. Kettles 125 gal. and larger, in addition to having the shells welded together, are reinforced with line of rivets

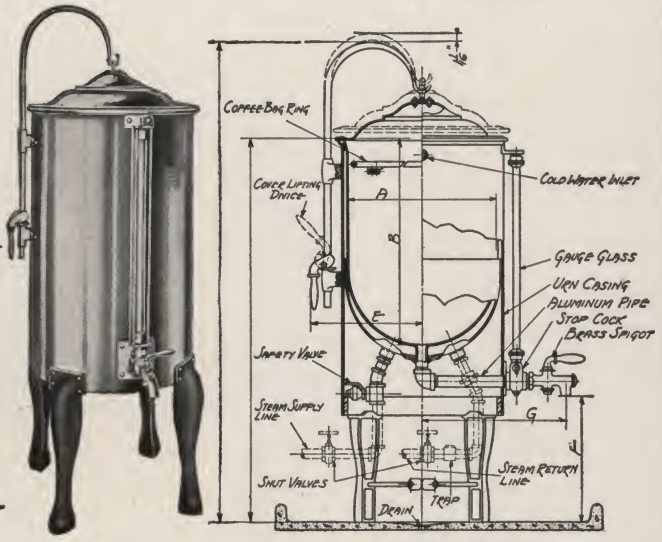
Dimensions of Type No. 3 Steam Jacketed Kettles															
Capacity in Gal.	5	10	15	20	25	30	40	50	60	75	80	100	125	150	200	250	300
A	15 3/8"	18"	20 3/8"	22 3/8"	23 1/4"	23 1/2"	26 1/2"	28 1/4"	30 3/4"	33 3/8"	33 3/8"	36 3/4"	43 3/4"	46"	55 1/4"	55 1/4"	57 1/4"
B	14"	16"	18"	20 1/2"	21"	21"	24"	26"	28"	30"	30"	33"	40"	44"	52"	52"	54"
C	10"	15"	18"	18 3/4"	21"	24"	25 1/2"	26 1/2"	28"	30"	32"	33"	30 1/2"	31"	31"	36"	39 1/2"
D	30 7/8"	35"	38 3/4"	39 3/8"	41 3/8"	44 3/4"	45 3/8"	47 7/16"	49 3/8"	51 1/2"	53 1/4"	54 1/16"	52 1/2"	53 3/8"	53 7/8"	58 1/16"	61 7/8"
E	29 1/8"	31 1/2"	32 7/8"	35 1/2"	36 1/4"	34 1/2"	37 1/2"	39 1/2"	40 1/4"	41 7/8"	41 7/8"	43 3/16"	40 3/4"	41 1/16"	44 1/2"	44 7/16"	45 7/16"
F	11 3/16"	12 1/16"	12 1/16"	13 1/4"	13 7/16"	13 1/16"	14 1/16"	15 5/16"	16 3/16"	17"	17"	17 1/2"	25 1/16"	26 1/16"	32 1/16"	32 1/16"	35 1/2"
G	8 1/8"	9 1/8"	11 1/8"	12 7/16"	12 7/8"	12 7/16"	14 1/2"	15 3/16"	16 1/2"	17 3/16"	17 3/16"	19 1/2"	22 1/4"	24 1/2"	28 1/2"	28 1/2"	30
Number of Legs	3	3	3	3	3	3	3	3	3	3	3	4	4	5	5	5	6
Number of Stay Bolts	—	—	—	—	—	—	—	—	—	—	—	3	3	5	5	5	6
Steam Inlet Size	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	3/4"	3/4"	1"	1"	1"	1"
Steam Outlet Size	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	3/4"	3/4"	1"	1"	1"	1"
Safety Valve Size	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	1"	1"	1"	1"	1"	1"
Kettle Outlet Size	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	2"	2"	2"	2"	2"
Vapor Collar Size	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	2"	2"	2"	2"	2"	2"	3"	3"	3"	3"	3"



Liberty Urn

The Liberty Urn is an outgrowth of the United States Government's need for a plain urn that could be produced quickly in large quantities. Like all other "Wear-Ever" equipment, it requires no tinning and, because of its shape, is easily and quickly cleaned. Its entire surface, inside and outside, is readily accessible. Because of simplicity of construction, cost of labor and material to make it is comparatively small; the selling price is quite reasonable. Arrow shows glass gauge protected by aluminum tubing indicating contents in gallons

Dimensions of Liberty Urns														
Capacity in Gallons	A	B	C	D	E	F	G	H	Number of Legs	Cold Water Inlet Size	Steam Inlet Size	Steam Outlet Size	Safety Valve Size	Kettle Outlet Size
20	18"	24 3/64"	44 3/64"	55 13/64"	32"	11 3/8"	16 5/8"	12 1/16"	3	1/2"	1/2"	1/2"	3/4"	1"
30	21"	27 1/8"	47 1/8"	59 1/4"	33 1/2"	12 1/16"	17 1/2"	14 5/8"	3	1/2"	1/2"	1/2"	3/4"	1"
40	21"	33 1/16"	53 1/16"	65 1/32"	33 1/2"	12 1/16"	17 1/32"	14 1/16"	3	1/2"	1/2"	1/2"	3/4"	1"
50	24"	33 1/16"	53 1/16"	66 1/32"	37 1/2"	14 1/16"	19 1/16"	15 1/2"	3	1/2"	1/2"	1/2"	3/4"	1"
60	26"	34 1/2"	54 1/2"	68 1/2"	38 1/2"	15 1/2"	20 1/2"	16 1/2"	3	1/2"	1/2"	1/2"	3/4"	1"
80	30"	34 1/2"	54 1/2"	71 1/2"	40 1/2"	17 1/2"	22 1/2"	18 1/2"	3	1/2"	1/2"	1/2"	3/4"	1"
100	30"	41 1/2"	61 1/2"	78 1/2"	40 1/2"	17 1/2"	22 1/2"	18 1/2"	3	1/2"	1/2"	1/2"	3/4"	1"
125	33"	43 1/2"	63 1/2"	81 1/2"	42 1/2"	19 1/2"	24 1/2"	20 1/2"	4	1/2"	1/2"	1/2"	3/4"	1"
150	33"	49 1/2"	69 1/2"	88 1/2"	42 1/2"	19 1/2"	24 1/2"	20 1/2"	4	1/2"	1/2"	1/2"	3/4"	1"



Encased Urn

The encased urn is more beautiful than the Liberty Urn and consequently is preferable if appearance is of greater importance than utility or price. Both this urn and the Liberty Urn are fitted with covers, cover lifting device, stand, gauge glass protected by aluminum tube which also forms an indicator showing the contents of the urn in gallons, 1-in. spigot, steam inlet and outlet and ring for coffee bag (coffee bags not supplied). The 20 and 25-gal. sizes can be furnished either with or without cover lifting device

Dimensions of Encased Urns														
Capacity in Gallons	A	B	C	D	E	F	G	Number of Legs	Cold Water Inlet Size	Steam Inlet Size	Steam Outlet Size	Safety Valve Size	Kettle Outlet Size	
20	18"	24 3/4"	50 3/4"	62 3/4"	33 1/2"	20 1/2"	16 1/2"	4	1/2"	1/2"	1/2"	3/4"	1"	
30	21"	27 1/2"	53 1/2"	66 1/2"	34 1/2"	20 1/2"	18 1/2"	4	1/2"	1/2"	1/2"	3/4"	1"	
40	21"	33 1/2"	59 1/2"	73 1/2"	34 1/2"	20 1/2"	18 1/2"	4	1/2"	1/2"	1/2"	3/4"	1"	
50	24"	33 1/2"	59 1/2"	73 1/2"	36 1/2"	20 1/2"	19 1/2"	4	1/2"	1/2"	1/2"	3/4"	1"	
60	26"	34 1/2"	60 1/2"	75 1/2"	37 1/2"	20 1/2"	20 1/2"	4	1/2"	1/2"	1/2"	3/4"	1"	
80	30"	34 1/2"	60 1/2"	78 1/2"	39 1/2"	20 1/2"	23 1/2"	4	1/2"	1/2"	1/2"	3/4"	1"	
100	30"	41 1/2"	62 1/2"	80 1/2"	39 1/2"	15 1/2"	23 1/2"	4	1/2"	1/2"	1/2"	3/4"	1"	
125	33"	43 1/2"	64 1/2"	83 1/2"	21 1/2"	15 1/2"	24 1/2"	4	1/2"	1/2"	1/2"	3/4"	1"	
150	33"	49 1/2"	71 1/2"	90 1/2"	21 1/2"	15 1/2"	24 1/2"	4	1/2"	1/2"	1/2"	3/4"	1"	

Kettles and Urns for Hotels, Restaurants and Hospitals

Uses of the kettles and urns illustrated are described under each type. The number of each to use for various conditions is given under the general notes.

Standard Specifications

Furnish and install where shown on plans, "Wear-Ever" kettles and urns as follows:

Type No. 3 Kettle—..... (quantity) "Wear-Ever" aluminum steam jacketed kettle(s), ... gal. capacity, Type No. 3, two-thirds jacketed, complete with machine steel or aluminum stand, safety valve, hinged cover, aluminum draw-off pipe, faucet, strainer and collar for vapor pipe. Baffle plate and inlet fitting to be integral. Both shell and jacket to be made from cold rolled, hard, thick sheet aluminum. Jacket and shell to be welded together. Kettles 125 gal. and larger in addition to having shells welded together are to be reinforced with line of rivets. (Kettles 100 gal. and larger shall have shell and jacket stayed with 3 tubular stays.) Legs of the stand to be welded securely to the stand and draw-off support to be attached to the legs by welding.

Type No. 1 Kettle—..... (quantity) "Wear-Ever" aluminum steam jacketed kettle(s), ... gal. capacity, Type No. 1 full jacketed complete with machine steel or aluminum stand, safety valve, hinged cover, aluminum draw-off pipe, faucet, strainer and collar for vapor pipe. Baffle plate and inlet fitting shall be integral. Both shell and jacket to be made from cold rolled, hard, thick, sheet aluminum. Jacket and shell to be welded together. Kettles 125 gal. and larger in addition to having shells welded together are to be reinforced with line of rivets. (Kettles 60 gal. and larger shall have shell and jacket stayed with 3 tubular stays.) Legs of the stand to be welded securely to the stand and draw-off support to be attached to the legs by welding.

Liberty Urn—..... (quantity) "Wear-Ever" aluminum Liberty institution urn(s), steam jacketed, ... gal. capacity, complete with stand, safety valve, draw-off pipe, clean-out type faucet, gauge glass, dome-shaped cover, cover lifting device and coffee bag ring. Both shell and jacket to be made from cold rolled, hard, thick, sheet aluminum. Jacket and shell to be welded together. Baffle plate and inlet fitting shall be integral. Legs to be welded securely to the stand and draw-off support to be attached to the legs by welding. Urn(s) to have ½-in. cold water inlet fitting placed in back as near top as possible. To have indicator bar spaced in multiples of 5 gal., said indicator bar and gauge glass protector to be one and the same.

Encased Urn—..... (quantity) "Wear-Ever" aluminum encased urn(s), steam jacketed, ... gal. capacity. Body made of two hard sheet aluminum plates welded together. Body to be encased in highly polished sheet aluminum casing, fitted on black enameled legs and fitted with high grade clean-out type faucet, dome-shaped cover, cover lifting device and coffee ring bag. Baffle plate and inlet fitting shall be integral. Urn(s) to have ½-in. cold water inlet fitting placed in back as near top as possible. To have indicator bar spaced in multiples of 5 gal., said indicator bar and gauge glass protector to be one and the same. All connections of steam pipe, etc., will be made under another contract.

General Notes—

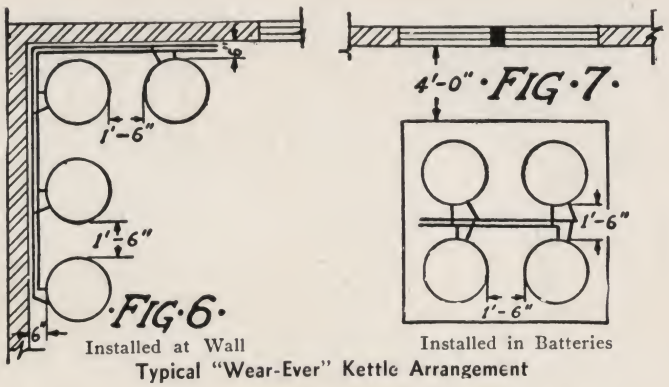
Kitchen Location—Space and design permitting, kitchen should be a one-story wing with windows on opposite sides and monitor roof to provide maximum ventilation. Avoid basement kitchens. In hotels, group the dining rooms with service pantries around kitchen. General hospitals require a different arrangement—general diet is cooked in main kitchen and distributed to ward dining rooms by dumbwaiters or trucks on elevators.

Kitchen Construction—Experts recommend quarry tile, enameled brick, glazed or matt tile or concrete for floor finish in the order named; for walls, a wainscot 6 ft. high of enameled brick or tile.

Kitchen Arrangement—Jacketed kettles are best arranged in batteries away from walls and directly under monitor skylight or hood to carry off vapors. Minimum space given in Figs. 6 and 7 is for cleaning purposes. Less space will not affect efficiency of apparatus. Vapor exhaust pipes are not recommended, but when used they should be of Monel metal.

Steam Mains—2-in. for 20 kettles or less, when kettles are near boiler and steam main properly insulated; 3-in. when pipes have many turns or valves, are not insulated or kettles are a great distance from boiler.

Aisle Space—Should be ample to insure efficient serving. Where trucks are used, minimum aisle width is 4 ft.



Installed at Wall — Installed in Batteries

Typical "Wear-Ever" Kettle Arrangement

Kettle Sizes—Depend on number of persons served and time allowed for it. The following figures will serve as a guide for the number, type and size required.

Hotels

100 rooms	One 40-gal. Type 3, complete with hinged cover
200 rooms	One 50-gal. Type 3, complete with hinged cover One 25-gal. Type 3, complete with hinged cover One 10-gal. Type 3, solid bottom, no cover
500 rooms	One 75-gal. Type 3, complete with hinged cover Three 60-gal. Type 3, complete with hinged cover One 20-gal. Type 3, solid bottom, no cover
800 rooms	Two 100-gal. Type 3, complete with hinged cover Two 75-gal. Type 3, complete with hinged cover One 60-gal. Type 3, complete with hinged cover One 25-gal. Type 3, solid bottom, no cover One 40-gal. tilting kettle
1000 rooms	Four 100-gal. Type 3, complete with hinged cover Three 80-gal. Type 3, complete with hinged cover One 60-gal. Type 3, complete with hinged cover One 25-gal. Type 3, complete with plain cover One-25-gal. Type 3, solid bottom, no cover One 60-gal. tilting kettle

Hospitals

50 beds	One 25-gal. Type 1, complete with hinged cover
150 beds	One 25-gal. Type 1, complete with hinged cover One 40-gal. Type 1, complete with hinged cover One 30-gal. urn (encased or Liberty)
250 beds	Two 60-gal. Type 1, complete with hinged cover One 50-gal. urn (encased or Liberty) One 10-gal. Type 1, solid bottom, no cover

Installation Notes—Equip steam inlet of each fixture with safety valve and globe type shut valve. Equip steam outlet pipe of each fixture with automatic steam trap and globe type shut valve. Where steam pressure exceeds 40 lb. per sq. in., a reducing valve must be installed in main line. Concealing supply and return pipes is not recommended. Suitable covering of pipes up to fixtures is advised.

References

Following is a partial list of hotels and hospitals in which "Wear-Ever" Kettles are installed, giving building, location and architect:

Hotels

St. Francis, San Francisco, Cal., Bliss & Faville
Los Angeles Biltmore, Los Angeles, Cal., Schultz & Weaver, New York, N. Y.
Ambassador, Los Angeles, Cal., Myron Hunt
Raddison, Minneapolis, Minn., Long, Lamoreaux & Long
Miami, Dayton, Ohio, H. L. Stevens Co., Chicago, Ill.
Hollenden, Cleveland, Ohio, Watson Co.
Washington (D. C.), Carrere & Hastings, New York, N. Y.
Monticello, Norfolk, Va., Peebles & Ferguson
Sylvania, Philadelphia, Pa., Leroy B. Rothschild
New Yorker, New York, N. Y.
Robert Treat, Newark, N. J., Guilbert & Betelle
Kimball, Springfield, Mass., S. M. Green Co.
Edgewater Beach, Chicago, Ill., Fugard & Knapp
Grand Canyon Hotel, Yellowstone Park, R. C. Reamer, Seattle, Wash.

Hospitals

St. Mary's, Rochester, Minn., C. H. Johnston, St. Paul, Minn.
Lakeside, Cleveland, Ohio, Coolidge & Shattuck, Boston, Mass.
Christ, Cincinnati, Ohio, Teitig & Lee
Brooklyn, Brooklyn, N. Y., Lord & Hewlett, New York, N. Y.
Cook Co., Chicago, Ill., Paul Gerhardt
Barnes, St. Louis, Mo., Trueblood & Graf

Printed in U. S. A.

AMERICAN MACHINERY CORPORATION

1120-1122 Vine Street
PHILADELPHIA, PA.

AMERICAN POTATO AND VEGETABLE PEELERS

Quickly and Thoroughly Remove Skins from All Hard Root Vegetables, Leaving Them Smooth, Clean and in Their Natural Shape Ready for Cooking

The "American" Vegetable Peeler provides the most efficient and economical method of paring potatoes, turnips, carrots, beets, parsnips, horseradish, onions, etc. Even small potatoes, which cannot be pared by hand and which otherwise would be wasted, are pared perfectly.

"American" Vegetable Peelers are designed by engineers and manufactured by mechanics who have had years of experience in this specialized line of work. They are built so well that hundreds of them are now in good working condition after fifteen to twenty years of constant use, with only minor replacements from time to time.

Some Outstanding Features

Alemite system lubrication.
Compact ruggedness.
Simplicity of construction.
Fewest wearing parts.
Abrasive disc can be recoated.
Ease with which an ordinary mechanic can make any repairs, should they be needed.

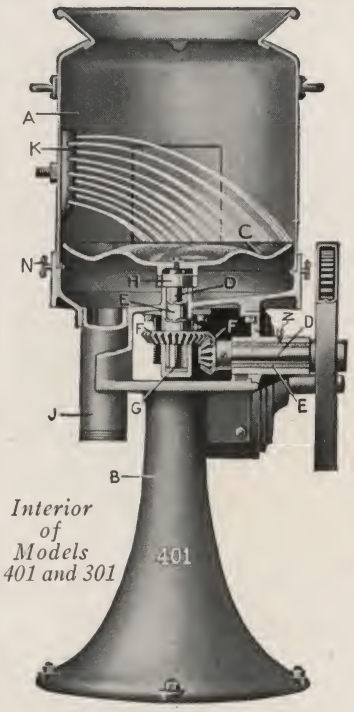
Motor Control

Thermostatic Control Switches—Supplied with all parers equipped with alternating-current motors regardless of the voltages, phases or cycles—also for direct-current motors up to and including ¼ hp.

Starting Boxes—Supplied for direct-current motors ½ hp. and over.

Guarantee

We guarantee to replace without charge any part or parts which may become broken through faulty materials or construction within two years after date of erection. Each disc is guaranteed for one year's work.



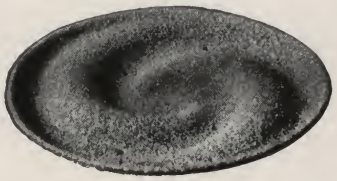
Interior of Models 401 and 301

Model No. 401

Peels 60 lbs. in 1 to 1½ minutes
Motor—1 hp.
Shipping weight—550 lbs.
Floor space—21x21 ins.
Price—$300.00

"American" Improved Spiral Disc

The whirling disc with carborundum fused directly to the cast iron while in a molten state rotates to perform the work of peeling the vegetables.



"American" Construction

"A"—Cylinder—Pressed steel—galvanized—removable.

"B"—Pedestal and Cylinder Base—Solid castings.

"C"—Friction Disc—Removable—has carborundum cast direct to the metal.

"D"—Steel Shafts—Vertical and horizontal.

"E"—Bearings—Phosphor bronze, horizontal and vertical.

"F"—Gears—Machine cut.

"G"—Lower or Step Oilless Bearing.

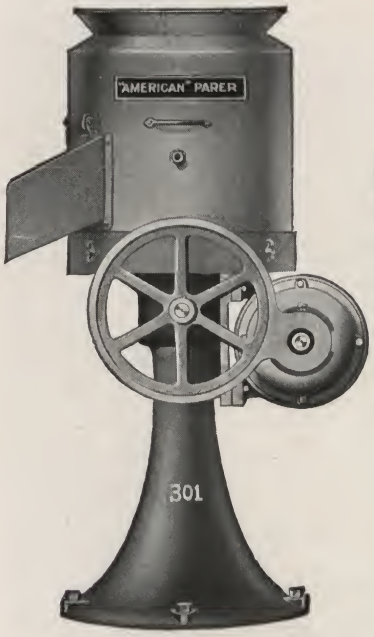
"H"—Watertight Collar—Casting with tapered lugs to fit slots in hub of disc.

"J"—Waste Outlet—Standard pipe tap—3 in.

"K"—Water Sprinkler—For ½-in. pipe.

"N"—Thumbnuts—Set of 4.

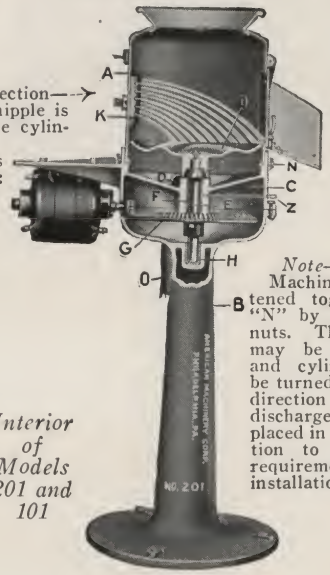
Note: For Steamships using salt water we supply phosphor bronze shafts which prevent them from rusting in the bearings.



Model No. 301

Peels 40 lbs. in 1 to 1½ minutes
Motor—½ hp.
Floor space—20x20 ins.
Shipping weight—425 lbs.
Price—$265.00

Water connection—→ a ½-in. pipe nipple is fastened to the cylinder.
This applies to all models:
401
301
201
101

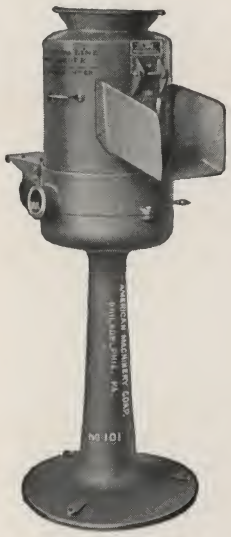


Note—"N" Machine is fastened together at "N" by 4 thumbnuts. These nuts may be loosened and cylinder can be turned in either direction allowing discharge to be placed in any position to suit the requirements of installation.

Interior of Models 201 and 101

Model No. 201

Peels 25 lbs. in 1 to 1½ minutes
Motor—¼ hp.
Floor space—19x19 ins.
Shipping weight—300 lbs.
Price—$200.00



Model No. 101

Peels 15 lbs. in 1 to 1½ minutes
Motor—⅙ hp.
Floor space—17½x17½ ins.
Shipping weight—265 lbs.
Price—$125.00

COLT'S PATENT FIRE ARMS MANUFACTURING CO.

HARTFORD, CONN.

NEW YORK, N. Y., 20 Vesey Street
CHICAGO, Ill., 626 W. Jackson Boulevard
PASADENA, CAL., 72 Annandale Road
CLEVELAND, OHIO, 2924 E. 132nd Street
DALLAS, TEX., Milam Hotel
ST. PAUL, MINN., 416 Roy Street

COLT AUTOSAN

DISHWASHING MACHINES

Dish and Silver Cleaning Machines

The twelve Colt Autosan models comprise a complete line of dish washing machines from the single rack models suitable for up to 500 diners per meal, to the large conveyor machines which represent the highest capacity dishwashing machines on the market. There is a Colt Autosan exactly suited for every type of installation.

The Colt Direct Spray Principle

All Colt Autosans operate on the direct spray principle.

Powerful direct sprays, both above and below, thoroughly clean all tableware without danger of breaking or chipping.

All spray tubes are stationary in operation—no moving parts to become worn or to get out of order.

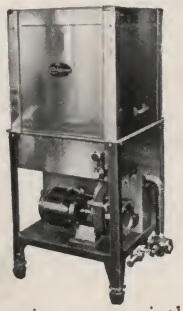
Built to High Colt Standards

Each model of Colt Autosan is built for hard service—long years of it. Materials are of high quality—construction is unusually rugged.

Exclusive features of mechanical design insure cleaner tableware in less time and at less cost.

Backed by Strong Colt Guarantee

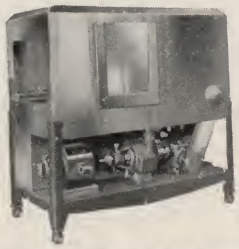
Back of every Colt Autosan stands the Colt guarantee—and back of the guarantee stands the reputation of the COLT'S PATENT FIRE ARMS MANUFACTURING COMPANY—a concern which for nearly a century has stood for square dealing and the highest standards of workmanship.



Models "R-1" and "S-1" Rack Type

Model "R-1"—The smallest Colt Autosan rack type machine, designed to wash tableware for as many as 500 persons per meal. Small space requirements, direct action sprays, single wash and rinse operating lever, easily removed scrap trays, easy acting doors, rugged construction, spray tubes removable without use of tools. For either straightaway or corner installation. Copper, Monel Metal, Galvanized Iron.

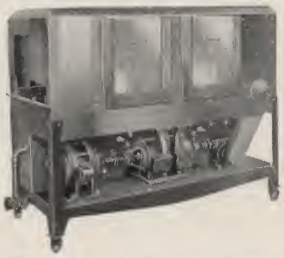
Model "S-1"—A rack type Colt Autosan embodying many practical features for maximum efficiency. Ideal for small restaurants, hotels, schools and hospitals. Interlocking fixed sprays secure maximum cleanliness in washing and rinsing tableware. Easy acting doors, non-rusting inside parts, spray tubes and scrap trays easily removed. Copper, Monel Metal.



Models "R-2" and "R-4" Rack Conveyor Type

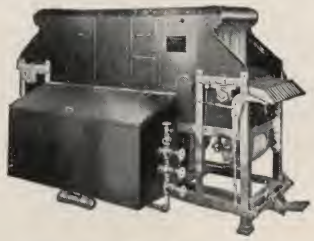
These two new models are built to fill a real need for compact, sturdy machines of the rack conveyor type. Racks of tableware are carried on a roller chain conveyor through a battery of wash and rinse sprays. These models represent a forward step in dishwashing machine development, including as they do, many exclusive new features of improved design. New type, easily cleaned pump, specially designed non-clogging spray tubes, adjustable feet. Copper, Monel metal, galvanized iron.

Model "RM-1" Manual Rack Type—Similar to Model "R-2" without conveyor. Racks of tableware are manually pushed through machine on special rollers. Copper, Monel Metal, Galvanized Iron.



Models "R-6" and "R-8" Rack Conveyor Type

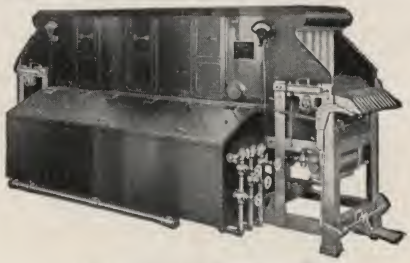
These two new models are of larger capacity than models "R-2" and "R-4," but operate on the same principle, racks of tableware passing through wash and rinse sprays on roller chain conveyors. They are designed for use where a ruggedly-built, high-capacity machine is required at the lowest possible cost. Furnished on special order only, in copper, Monel Metal, Galvanized Iron.



Model "C-22" Conveyor Type

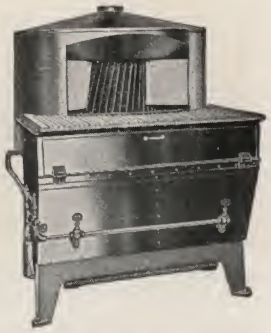
For large volume work. Mechanically like Model "C-3," embodying the same labor saving features, but with *two* tanks instead of three, hence occupying less floor space and with somewhat less capacity. Copper or Monel Metal.

Model "C-2"—Identical to Model "C-22," except with conveyor 17 in. wide instead of 22 in. Copper or Monel Metal.



Model "C-3" Conveyor Type

For heavy duty. The largest Autosan made. It has maximum capacity, speed and efficiency. For big hotels, schools, clubs, restaurants and hospitals it (1) washes, (2) rewashes, (3) rinses and (4) sterilizes all tableware quickly, safely and economically for 2000 persons per meal and upward. Copper or Monel Metal.



Models "B" and "A-2" Rotary Type

Model "B"—A compact, simple, sturdy dishwasher that is ideal for hotels, clubs, restaurants and hospitals of average size. Operates on the rotary conveyor principle which gives large capacity with extreme economy of floor space and remarkable ease of operation and saving of labor. Copper or Monel Metal.

Model "A-2"—Similar in design to Model "B," but smaller. Capacity, 600 persons. Copper or Monel Metal.

COLT AUTOSAN DISHWASHERS

Model	R-1	R-2	R-4	R-6	R-8	S-1	RM-1	A-2	B	C-2	C-22	C-3
Capacity—Persons per meal (cafeteria service)	500	1100	1500	2000	2500	500	1100	600	1000	1500	2000	3500
Floor dimensions:												
Length (between tables), in.	27	60	70	80	100	28½	56½	46	58	87	87	120
Depth, in.	27	30	30	30	32	28½	28½	34	48	40	50	50
Width (table height), in.	60½	59	59	59	59	64	59	66	64	59	59	59
Height, in.	¾	2	3	3	5	1	2	1	2	2	2	3
Motor, hp.	2	2	2	2	2	2	2	2	2	2	3	2
Connections:												
Steam and water, in.	½	½	½	½	½	½	½	½	½	½	¾	¾
Sewer, in.	2	2	2	2	2	2	2	2	2	2	2	2
Shipping weight, net, lb.	575	1125	1325	1500	1850	650	850	815	1490	1950	2096	2950

Write for Autosan Architects' Portfolio containing complete information, drawings, specifications, for all models.

THE HOBART MANUFACTURING CO.

Makers of Electric Food-preparing and Dishwashing Machines for Commercial and Institutional Kitchens and Bakeries

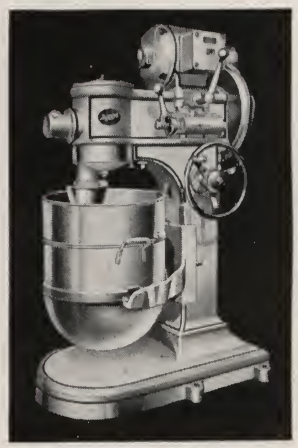
TROY, OHIO

NEW YORK OFFICE, 45 East 27th Street, near Fourth Avenue CHICAGO OFFICE, 308 West Randolph Street

SALES AND SERVICE OFFICES IN ALL PRINCIPAL CITIES. SOLD THROUGH LEADING KITCHEN OUTFITTERS

Products

THE HOBART MANUFACTURING CO. builds a complete line of ELECTRIC FOOD MIXERS, GLASS and DISHWASHING MACHINES, POTATO PEELERS, SLICING MACHINES, FOOD CUTTERS, MEAT and FOOD CHOPPERS and COFFEE and SPICE MILLS, for Commercial and Institutional Kitchens and Bakeries.



Hobart Super Mixer Model M-80
Capacity of bowl—80 qts. 110 quarts with bowl extension rim. Ideal Bread and General Kitchen Machine. Wide assortment of smaller models



Hobart Model C-10 Mixer
Capacity of bowl 10 quarts

Advantages

Hobart Machines have all the sturdiness, durability and quality that the World's Largest Manufacturers of Electric Kitchen Machines can possibly put into them. They are built entirely by our own long-experienced organization of skilled craftsmen—even to the motors, which are fully guaranteed. Every single machine gives greatest value for your money. With all service and guarantees coming from one place, you avoid much uncertainty, inconvenience and confusion.

Hobart Mixers

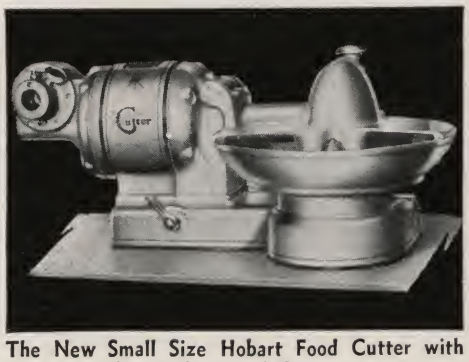
Hobart Mixers are built in 3, 5, 10, 12, 15, 20, 30, 40, 60, 80 and 110-quart bowl capacities. There is a model to meet any kitchen or bakery need. They mix, beat, whip, blend, mash. With attachments they chop, grind, slice, shred, grate, crumb, sieve, strain, etc.

Hobart-Crescent Dishwashing Machines

Hobart-Crescent Glass and Dishwashers are made in 8 automatic and semi-automatic models, to meet the smallest or largest demand. They wash all tableware *clean* with a high degree of sterilization in the shortest possible time. They carry such exclusive features as revolving wash arms and the patented Dual-Drive principle.

Hobart Food Cutters

Hobart Food Cutters embody distinct advances in speed, thoroughness, safety, ease of cleaning and economy of space. They cut meats, vegetables, firm fruits, cocoanut, citron, nuts, boiled eggs, beets—practically anything in the food line, uniformly, in a few seconds' time.



The New Small Size Hobart Food Cutter with Latest Improved Features
Two other sizes

Hobart Potato Peelers

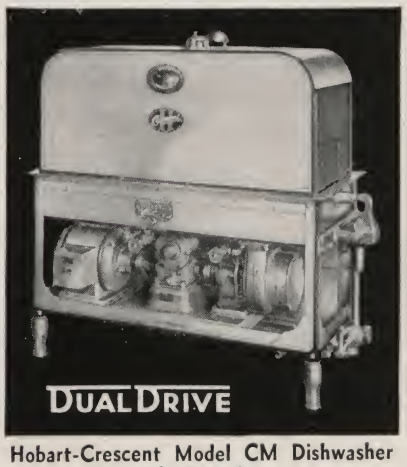
Hobart Potato Peelers give new savings in time and food costs. There are three sizes, with capacities from 15 to 45 lbs. peeled in 90 seconds with negligible peel loss. Quiet, speedy and water tight, they can also be used for sweet potatoes, carrots, parsnips, turnips, etc.

Hobart Slicing Machines

The Hobart Electric Ball Bearing Slicing Machine combines the latest features in *one machine*. It is ideal for all boneless meats, hot or cold, cooked or uncooked, bread, cheese, vegetables, fruits, etc. Convenient to operate, speedy, quiet, safe and easy to clean.

Service

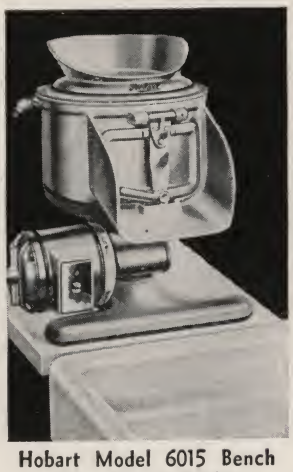
Hobart maintains a nation-wide corps of factory-trained service men such as few other manufacturers of electric kitchen machines can offer. No long, trying and money-losing delays. The Hobart Engineering and Research Departments are always ready to co-operate with architects. The Architect's Data Book, A.I.A. File No. 31H2, which contains weights, dimensions, capacities and technical details of Hobart Machines, is gladly furnished on request.



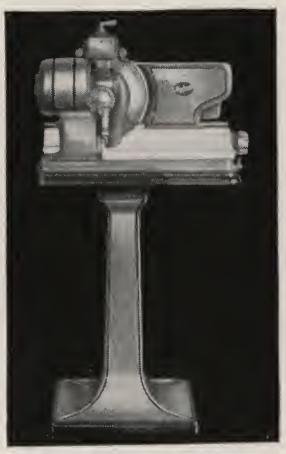
Hobart-Crescent Model CM Dishwasher with Dual-drive
Many sizes



Hobart-Crescent Model AM-2 Glass and Dishwasher



Hobart Model 6015 Bench Type Potato Peeler
Also furnished for floor use. Three sizes



Hobart Slicing Machine on Floor Pedestal
Also furnished for bench or table

THE INTERNATIONAL NICKEL COMPANY, INC.

Monel Metal and Nickel and Allied Products

EXECUTIVE OFFICES
67 Wall Street
NEW YORK, N. Y.

MINES AND SMELTER: Copper Cliff, Ont., Canada
ROLLING MILL AND REFINERY: Huntington, W. Va.
REFINERY: Port Colborne, Ont., Canada
FOUNDRY: Bayonne, N. J.

For Our Other Products, see Manufacturers' Index

For Sources of Supply, see our page on Metals

Products

MONEL METAL—available from stocks conveniently located throughout the country and made in all commercial forms required by manufacturers of food service equipment. (See Manufacturers' Index, our section on Metals, for commercial forms and location of warehouses.)

All necessary accessories such as nuts, bolts, screws, rivets, etc., are also available.

TRADE-MARK

Monel Metal

Monel Metal is a registered trade-mark applied to an alloy containing approximately two-thirds nickel and one-third copper. Monel Metal is mined, smelted, refined, rolled, and marketed solely by International Nickel.

Advantages of Monel Metal for Food Service Equipment

(1) Absolutely rustproof.

(2) Resists corrosion by food juices and fruit acids.

(3) Strong as steel; tougher than steel.

(4) Easy to clean; therefore sanitary.

(5) Beautiful appearance; has color of platinum.

(6) Durable—proven by over 20 years of service.

(7) Easily fabricated.



Monel Metal Sink, Serving Table and Steam Table, Merchandise Mart Restaurant, Chicago, Ill.

Proven Uses of Monel Metal in Food Service Equipment

Monel Metal is used for all exposed surfaces where appearance, cleanliness, and long life are required in the following types of equipment: Bake Ovens (linings, exterior or trim); Bins (bakers, vegetable, etc.); Butter Serving Machines (parts in contact with butter); Cabinets (kitchen); Canopies and Hoods; Checkers' Desks; Coolers for water and beverages; Counters (display, cafeteria); Cutlery Boxes; Dispensers (milk, cream—exterior or trim—solid nickel for linings); Drainboards; Dish Carriers; Dishwashing Machines; Egg Timers; Fish Chests; Garde Manger; Grills (bacon, etc.); Railings (cafeteria, etc.); Ranges; Oven Linings, Refrigerators (facing and trim); Shelving; Sinks (vegetable, scullery, dish, etc.); Slicing Machines (all parts in contact with food); Steamers (vegetable—linings and baskets); Steam Tables; Tables (bakers, cooks, dish, work, etc.); Trucks; Urns (coffee, chocolate, hot water—liners and exteriors); Urn Stands, Warmers (roll, plate, cup, food).

For actual cooking and storage of foods, we recommend solid nickel, which is used for the following purposes: Cream and Milk Dispensers (linings); Steam Table Insets; Steam Jacketed Kettles.

Long Service Life of Monel Metal Equipment

Illustrative of the long service life of Monel Metal food service equipment are the following installations, a few of the many that are still serving their owners faithfully after years of severe service.

Name	Year installed
Hotel Statler, Cleveland, Ohio	1912
Hotel Gibson, Cincinnati, Ohio	1913
Claypool Hotel, Indianapolis, Ind.	1914
Angel Guardian Orphanage, Chicago, Ill.	1915
Hotel Statler, Detroit, Mich.	1915
Hotel Blackhawk, Davenport, Iowa	1915
Canadian Pacific Railway Terminal Restaurant, Vancouver, B. C.	1915
Henry Ford Hospital, Detroit, Mich.	1917
Hotel Biltmore, New York, N. Y.	1917
Hotel Pennsylvania, New York, N. Y.	1918
The Greenbrier, White Sulphur Springs, W. Va.	1920
Chicago Beach Hotel, Chicago, Ill.	1920
Prudential Life Insurance Company, Newark, N. J.	1922

Some Prominent Recent Installations of Monel Metal Food Service Equipment

Aetna Life Insurance Co., Hartford, Conn.
Merchandise Mart Restaurants, Chicago, Ill.
Canadian Bank of Commerce Building, Toronto, Ontario
Empire State Club, New York, N. Y.
Royal York Hotel, Toronto, Ontario
St. George Hotel, Brooklyn, N. Y.
Department of Commerce Building, Washington, D. C.
Oklahoma Biltmore Hotel, Oklahoma City, Okla.
S.S. Manhattan, United States Lines
S.S. President Coolidge, Dollar Line
S.S. Empress of Britain, Canadian Pacific Steamship Co.
Waldorf-Astoria Hotel, New York, N. Y.
Los Angeles County Hospital, Los Angeles, Cal.
Harborview Hospital, Seattle, Wash.
Cornell Medical Center, New York, N. Y.
Kings County Hospital, Brooklyn, N. Y.
T. Eaton Company, Toronto, Canada

Services

Architects and engineers are invited to make use of the extensive advisory service maintained by this organization. A call to any of our sales offices, listed in our section on Metals, will bring you a Monel Metal specialist. In co-operation with kitchen equipment engineers, Monel Metal specialists can contribute materially in the application of Monel Metal to food service equipment.

Available Publications

To assist architects and engineers to form a clearer conception of the possibilities for the application of Monel Metal, THE INTERNATIONAL NICKEL COMPANY, INC., has prepared a series of reference folders and booklets, available upon request.

ESTABLISHED 1901

TELEPHONE
CHelsea 3-7626

THE PROMETHEUS ELECTRIC CORP.

352 West 13th Street, NEW YORK, N. Y.

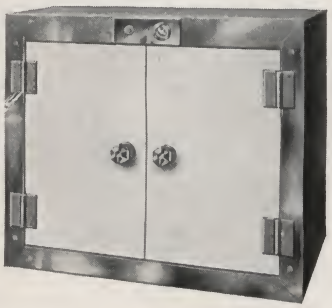
PROMETHEUS
TRADE-MARK

Prometheus Plate Warmer

Used in the butler's pantry, kitchen, or hospital ward for warming dishes and food. Prevents breakage of china and preserves the original delicious flavor of the food. Approved by the National Board of Fire Underwriters.

Construction—Substantial welded angle iron frame with double walls, thoroughly lagged. Shelves built on heavy iron rod, and supported on angle iron brackets. All interior fittings are removable. Can be had with vitreous enamel doors in white or color, also with monel metal top which can be used as a hot plate. All fittings are chrome plated.

Thermostatic Cut-off and Heating Element—By a patented arrangement, the heating units are contained in shallow flues, attached to the walls of the interior, so that water or gravy which may be spilled can not cause a short circuit. Heating elements never become red-hot. Can also be had with a patented thermostatic cut-off.



Although plate warmers are usually built to architect's specifications, we also make the following stock sizes:

Type	Outside dimensions			Current consumed, watts
	Wide	High	Deep	
800	18″	18″	18″	400
801	18″	18″	18″	400
801A	19″	30″	16″	500
802	25″	24″	18″	600
803	30″	30″	20″	700
804	36″	30″	20″	800

Outside finished in Russia iron. Door finished in porcelain enamel. All types except No. 800 have chrome plated trimmings. When ordering plate warmers to be built to specifications, kindly give the following information:

Trim Extension—This is the distance the chrome plated trim should extend beyond the body of the plate warmer if the plate warmer is of the built-in type. Otherwise the trim will be flush with the body.

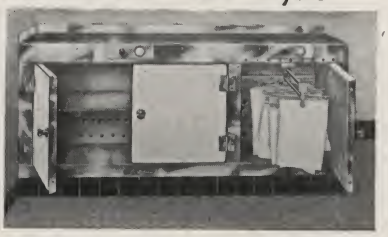
Position of Leads—Leads may be brought out at any specified point.

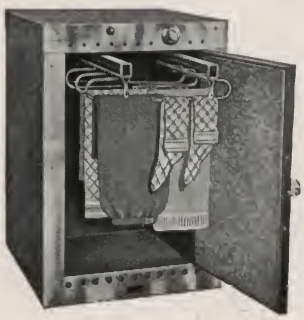
Voltage—Give line voltage.

Blue prints upon request.

Combination Plate Warmers and Towel Dryers

For kitchens and serving pantries in residences and clubs. They are built in two sections. One has shelves and serves as a plate warming cabinet, while the other, fitted with racks, serves for drying towels. Built to specifications.





Clothes and Towel Dryer

Usually built to order to fit space available. There are two stock sizes:

No. 810, 2 towel racks, 20 in. wide, 30 in. high, and 22 in. deep.

No. 812, 4 towel racks, 36 in. wide, 30 in. high, and 22 in. deep.

Electric Tray Conveyors and Food Trucks

A complete line of food conveyors, both electric and thermal, are made to order. Complete catalogue illustrations will be furnished upon request.





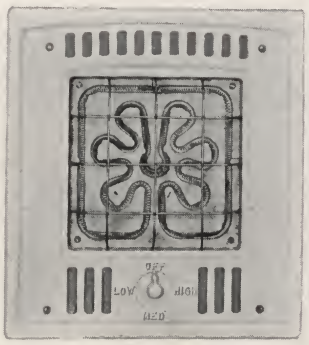
Serving Table for Diet Kitchens, Hospitals and Hotels

Made in a variety of sizes and in various arrangements of meat pans and pots. Built to specifications.

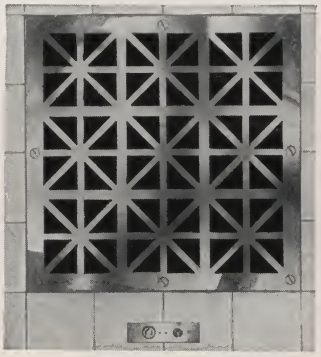
Flush Type Heater

The new Type 370 heater with cast iron face plate, covered with vitreous porcelain enamel. Variety of colors. The three-heat switch is built into the heater. The heating element is protected with a monel metal guard.

The Type 350 heater has a highly polished monel metal grill. The heating element is of the convection type, insuring an even distribution of heat.



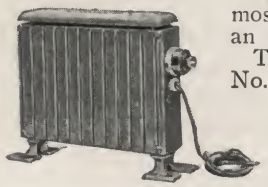
Type 370 and 371



Type 350 and 351

Type No.	Watts	Register		Body		
		Height	Width	Height	Width	Depth
370	1500	16½″	15″	15½″	12″	4″
371	2000	16½″	15″	15½″	12″	4″
350	800	15″	15″	13½″	13½″	3½″
351	1500	15″	15″	13½″	13½″	3½″

Prometheus Thermostatically Controlled Electric Heater



A specially designed Prometheus thermostatically controlled heater. Maintains an even temperature.

Three sizes: No. 331, 1000 watts and No. 332, 2000 watts, both 16 in. long. 14½ in. high, 4 in. deep, No. 335, 5000 watts, size 18 in. long, 24 in. high, 6½ in. deep.

Especially recommended for use in organ lofts. It protects the organ against cold and deterioration from dampness.

Sterilizers, Autoclaves, Cabinets, Therapeutic and Operating Lamps for Hospitals

A fully illustrated catalogue showing our complete line of hospital equipment upon request.

Write for a complete catalogue of above products.

THE JOHN VAN RANGE COMPANY

Kitchen Engineers and Manufacturers of Equipment for the Preparation and Serving of Food

Fifth and Butler Streets, CINCINNATI, OHIO

BRANCH OFFICES

ATLANTA BOSTON CLEVELAND DETROIT MUSKOGEE NEW ORLEANS NEW YORK

Products and Services

EQUIPMENT for the PREPARATION and SERVING of FOOD for cafeterias, churches, clubs, coffee shops, hospitals, hotels, institutions, restaurants, schools, steamships, etc.

COMPLETE ENGINEERING SERVICE for Architects, Contractors, Owners and Operators.

Van Equipment

The Van line includes everything required for the complete equipment of the food preparation and serving departments of cafeterias, churches, clubs, coffee shops, hospitals, hotels, institutions, restaurants, steamships and schools.

For more than three quarters of a century THE JOHN VAN RANGE COMPANY has occupied a position of acknowledged leadership in its field. During that period thousands of the most representative establishments and institutions in this country and in foreign lands have been Van-equipped. Van Kitchen and Serving Equipment is built with rugged strength that assures long life, minimum cost for upkeep and economical operation.

The business naturally falls into two major departments: (1) Engineering and (2) Manufacturing. Many items, such as ranges, coffee urns, mixing machines, bakery equipment, steam ovens, kettles, broilers, etc., are manufactured and stocked for immediate delivery. Occasional supplies, miscellaneous cooking utensils, etc., are stocked and catalogued, enabling our customers to call on us for immediate, day-by-day accommodation.

Engineering Service

The efficient and economical arrangement of the kitchen, serving and dining rooms calls for highly specialized technical knowledge and experience supplementary to that of most architects. Location of kitchen, floor space, placing of each article of equipment, size and location of steam, gas and electric connections, proper ventilation, straight-line handling of all food from receiving department through the kitchen and the service, to the final disposal of garbage, all these involve detailed planning, preferably *before* partitions, etc., are located. Proper provisions of this kind in advance frequently effect economies in operation which mean savings in money and increased earnings on the investment.

THE JOHN VAN RANGE COMPANY retains a staff of competent kitchen engineers whose services are available without cost to those interested. Complete detail plans, blue prints, etc., will be furnished on request.

Special Technical Literature

Each class of establishment has problems peculiar to itself. Equipment and layout suitable for a cafeteria or schoolhouse may be ill-adapted to the requirements of a hotel. Hospitals require special food equipment, both for the staff and for floor service and diet kitchens.

THE JOHN VAN RANGE COMPANY has provided special books for each class of establishments: cafeterias, churches, clubs, hospitals, hotels, institutions, restaurants, steamships and schools. Any or all of these books may be secured by writing to the home office at Cincinnati.

Typical John Van Installations

Some conception of the character of our equipment and engineering service may be derived from the following listing, taken at random from thousands.

Cafeterias

Frigidaire Corp. (numerous installations), Dayton, Ohio
Procter & Gamble Co. (numerous installations), Cincinnati, Ohio
Georgian Cafeterias (12 installations), Boston, Mass.
E. I. DuPont de Nemours & Co., Inc., Waynesboro, Va.
Illinois Merchants Trust Co., Chicago, Ill.
Postal Telegraph & Cable Company, Chicago, Ill.
American Can Co., Inc., New York, N. Y.

Churches

Brewster Pilgrim Congregational Church, Detroit, Mich.
Central M. E. Church, Brooklyn, N. Y.
Hyde Park Community Church, Cincinnati, Ohio
First Baptist Church, Nashville, Tenn.

Clubs

Lake Shore Athletic Club, Chicago, Ill.
Detroit Athletic Club, Detroit, Mich.
The Mayfair, Boston, Mass.
Dearborn Country Club, Dearborn, Mich.
Grosse Point Club, Grosse Point, Mich.
Fenwick Club, Cincinnati, Ohio
University Club, Rochester, N. Y.

Hospitals

Henry Ford Hospital, Detroit, Mich.
Christ Hospital, Cincinnati, Ohio
James Whitcomb Riley Memorial Hospital, Indianapolis, Ind.
Mt. Sinai Hospital, Cleveland, Ohio
Duke University Hospital, Durham, N. C.
New England Medical Center, Boston, Mass.
St. Peters General Hospital, New Brunswick, N. J.
Miami Valley Hospital, Dayton, Ohio
Crippled Children's Hospital, Oklahoma City, Okla.

Hotels

New Yorker Hotel, New York, N. Y.
National Hotel, Havana, Cuba
Manger Hotel, Boston, Mass.
Statler Hotel, Buffalo, N. Y. and Cleveland, Ohio
Governor Clinton Hotel, New York, N. Y.
Starrett's Netherland Plaza, Cincinnati, Ohio
Sinton-St. Nicholas, Cincinnati, Ohio
Hotel Gibson, Cincinnati, Ohio
Skirvin Hotel, Oklahoma City, Okla.
Hilton Hotel Co. (numerous installations), Dallas, Tex.

Institutions

U. S. Penitentiary, Ft. Leavenworth, Kan.
Y. M. C. A. and Y. W. C. A. (numerous installations)
State Prison Colony (10 kitchens), Norfolk, Mass.
Woodmen of the World Sanitarium, San Antonio, Tex.
Hamilton County Home, Cincinnati, Ohio
Oklahoma State Penitentiary, McAllister, Okla.
Andrew Freeman Home, New York, N. Y.
Buncombe County Jail, Asheville, N. C.
Criminal Courts and Jail Buildings, New Orleans, La.

Schools and Colleges

Columbia University, New York, N. Y.
Brooklyn Technical High School, Brooklyn, N. Y.
University of Cincinnati, Cincinnati, Ohio
University of Chicago, Chicago, Ill.
Simmons College, Boston, Mass.
Mississippi A. & M. College, Starksville, Miss.
Miami University, Oxford, Ohio

Restaurants

Leading establishments throughout the United States

REPRESENTATIVE INSTALLATIONS OF VAN EQUIPMENT

For the Preparation and Serving of Food

The views shown below convey a general idea of the manner in which the Van Engineering Department co-operates with the architects to secure maximum returns from every foot of floor space; to facilitate and speed service and to adapt the equipment to the specific requirements of different classes of establishments.

Special attention is called to the Van Service as applied to the peculiar requirements of hospitals. General kitchen and dining service for staff members and residents is supplemented by special diet kitchens and floor service equipment to insure individual room service to patients. Van Floor Food Service Trucks are electrically heated.



Coffee Shop—Crown Hotel, Providence, R. I.
Installed by THE JOHN VAN RANGE COMPANY, Cincinnati

The installation to the left is typical of THE JOHN VAN RANGE COMPANY'S method of designing food service equipment for economy of space and the comfortable seating of guests. Ample aisles assure rapid table service supplementary to the counter service. Individual tables of black glass. Note arrangement of Van Counters, Coffee Urns and Warmers.

No order too large for VAN capacity, None too small for our conscientious attention. Address Dept. S.





Above: **General Kitchen, Christ Hospital, Cincinnati, Ohio**
Engineered and equipped throughout by THE JOHN VAN RANGE COMPANY

Left: **Van Floor Food Service Trucks, Electrically Heated, Christ Hospital**

Capacity

This company is prepared to render complete engineering, designing, manufacturing and installation service in connection with the largest and most elaborate projects as well as for medium sized and small operations. We solicit correspondence. Address THE JOHN VAN RANGE COMPANY, Department S, Cincinnati, Ohio.

RAMP BUILDINGS CORPORATION

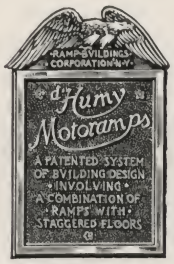
Consulting Garage Engineers

21 East 40th Street, NEW YORK, N. Y.

Service

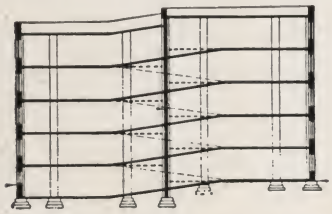
This company works with the architect and places its specialized knowledge at his disposal in the design, laying out, construction and management of any multi-floor garage.

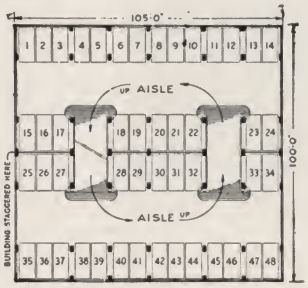
d'Humy Motoramps are short, easy-grade ramps connecting staggered floors, insuring maximum storage space and minimum operating costs in a garage. They eliminate the heavy investment in elevators and their high operating costs, and at the same time take up less space than ordinary ramps, either straight, curved, or spiral. d'Humy Motoramps make garages efficient and insure maximum revenue.



d'Humy Motoramps

The basis of this system of building design is the arranging of a portion of the structure with floor levels intermediate between the floor levels of the rest of the building. The floors of the two sections are joined by short, inclined ramps, each rising one-half story at an easy grade.





Elevation shows the typical stagger of floor levels. Plan shows how single d'Humy Motoramps take the place of connecting aisles

By making the dividing line between units vertically on one facade, the architect has the opportunity of achieving the unusual by emphasizing the staggered floors; on many plots the stagger may be concealed, if desired, so that it does not show in the elevation.

d'Humy Motoramps are adaptable for plots of any dimension greater than 50x100 ft. and are readily adapted to plots of irregular shape.

d'Humy Motoramps have been used in 2-story buildings and in garages as high as 11 stories—and higher buildings are contemplated. For large capacity structures it is advisable to provide separate ramps for ascending and descending travel.

Advantages of d'Humy Motoramps

Complete visibility for the motorist on short length, open side ramps.

100% convenience in driving to or from any storage space—no congestion.

Elimination of necessity of connecting aisles.

Maximum car storage and maximum net income for the owner.

Increased opportunity for sale of merchandise and service.

Simple construction, no depreciation, no mechanical troubles, no after-expense.

How We Serve Architects

Without cost or obligation, our engineers will prepare sketch plans on any garage project to demonstrate the efficiency of d'Humy Motoramps in achieving maximum storage space and insuring maximum income. Alternate layouts where possible, will be submitted.

Our staff is available for preliminary consideration of the possibilities of any garage project backed by an experience of twelve years in the design, construction, financing and operation of parking garages.

Consultation with us in the early stages of any such discussion involves no obligation and is not charged for.

Following the arrangement of a contract between the owner and this company for the use of d'Humy Motoramps, our complete engineering service is made available at no cost to the architect, including consultation with the architect as to:

(a) Floor layout of car spaces.
(b) Establishment of critical dimensions.
(c) Planning of entrance, control and service facilities.
(d) Selection and design of the most efficient means of vehicular interfloor communication for the particular requirements.
(e) Selection of best and most economical equipment as learned in our experience on hundreds of garages.
(f) Method of construction.
(g) Provision for the indispensable mechanical equipment.
(h) Checking of final plans.
(i) Any other problems that may arise in the designing or construction of the building.

Cost to Building Owner

For the use of the d'Humy Motoramp System and our complete engineering service, a charge (based on the total number of square feet of garage floor area) is made to the owner of the building. There is no charge to the architect.

Installations

Following is a short list of representative Motoramp garages selected from the list of more than 270 thus far completed:

Albany—Albany Garage
Atlanta—Cone Street Garage
Atlantic City—Chalfonte-Haddon Hall Garage
Baltimore—The Downtown Garage
Boston—Bowdoin Square Garage
Buffalo—Genesee Motoramp Garage
Chicago—South Loop Motoramp Garage
Cincinnati—Broadway Garage
Cleveland—Terminal Garage
Denver—Auto Hotel
Detroit—Book Tower Garage
Kansas City—Pickwick Terminal Garage
Montreal—Bleury Garage
New Orleans—Iberville Garage
Omaha—Redick Tower Garage
Philadelphia—1616 Walnut St.
St. Louis—Ferro Concrete Garage
San Francisco—Four Fifty Sutter Garage
Seattle—Four Stores Garage
Syracuse—Syracuse Garage
Troy—Hendrick Hudson Garage
Washington, D. C.—Capital Garage

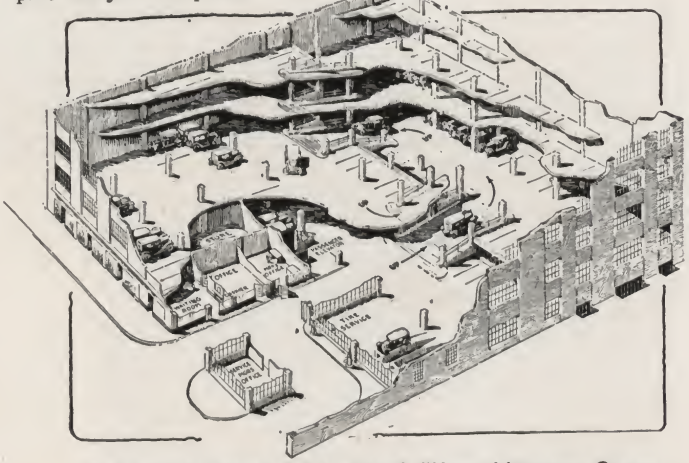
Literature Available

The Company will be glad to send to any architect a brochure, "The Modern Garage," explaining where and why garages are needed, what they will earn, what d'Humy Motoramps are and will do, how we serve architects, and describing the interesting features of some of the many garages on which we have consulted.

Call on Us Freely

RAMP BUILDINGS CORPORATION emphasizes its willingness to consult with any architect, at any time, on any problem involving the design, construction, financing, operation or management of any garage. Frequently there is more than one possible layout of a garage for achieving high operating efficiency—we are always glad to have architects submit their garage layouts to us for our suggestions as to possibly improving them.

The engineers of the company have an unsurpassed fund of experience in this kind of work, which they will be glad to place at your disposal.



Cut-away Perspective of a Typical d'Humy Motoramp Garage
Single ramp system—up and down traffic on same ramps

AMERICAN MAIL CHUTE CORPORATION

TELEPHONE
SOuth 8-1096

251 Fourth Avenue
BROOKLYN, N. Y.

AGENTS IN PRINCIPAL CITIES

The American Mailing System

The American Mailing System comprises the manufacture and installation of the American Mail Chutes, Model B and Twin Chute, and Receiving Boxes for Post Office Collection Service.

The AMERICAN MAIL CHUTE CORPORATION is a development by men successful in this field for many years, and possesses a capable organization and a factory designed, built and equipped exclusively for the manufacture of the American Mail Chute and Receiving Boxes.

Postal Regulations—We are under bond in a large penal sum conditioned upon the observance of the Post Office Department regulations, and our form of contract must govern all installations.

Model B American Mail Chute

Improved Construction—Exclusively designed, specially shaped bronze panel mouldings, in combination with the ribboned channel edge, insure efficient operation. Conforming with the modern motif in architecture, is the symmetry of the vertical lines—lending to the whole a pleasing dignity of design and grace.

Special Finishes—Can be supplied in any finish desired.

Twin Chute

In buildings of great height, or where mail is unusually heavy, it is customary to install our Twin Chute, which has mailing apertures on all alternate floors, thus precluding congestion of mail.

American Mail Boxes

Standard Mail Box, as illustrated, is made of solid sheet bronze with door, frame and mouldings of cast bronze, finished as desired. Can be had in any of the white metals such as aluminum, benedict metal, etc. Write for photos and details of other standard boxes

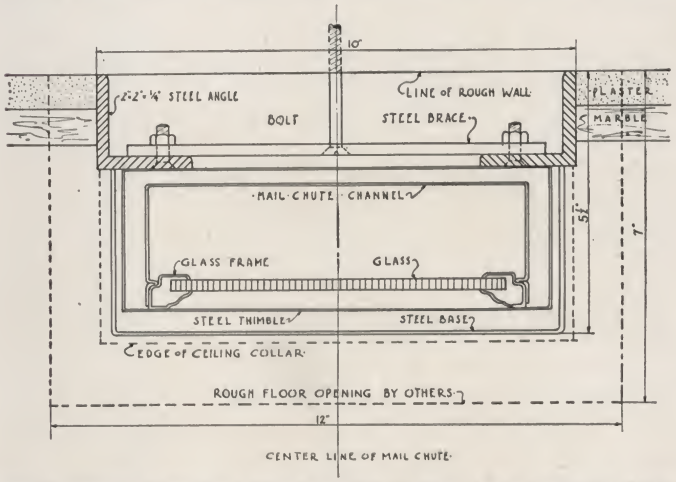
We are equipped to fabricate special boxes designed by the architect, or from our own special designs.

Specifications Model B American Mail Chute

Note: Rough floor openings, 7x12 in., indicated by heavy broken line in drawing below, are not included in Mail Chute Contract and should be otherwise provided for.

(A) Mail Chute Equipment—To be that manufactured by the AMERICAN MAIL CHUTE CORPORATION, Brooklyn, N. Y., and installed complete including supporting framing.

(B) Supporting Framing—To be of 2x2-in. steel angles, perfectly straight, securely fastened, extending from the top of the mail box, to a point 4 ft. 8 in. above the finished top floor to be served, and there finished by mitering and returning angle across the top. Frame to be absolutely rigid and painted two coats of lead and oil, final finish by others.



Details Showing Preparatory Work with 2x2-in. Steel Angle Supporting Frame

(C) Mail Chute—To be the American Mail Chute, Model B, erected on the supporting angle frame, and to extend from the top of the box, through the intervening floors to a point 4 ft. 7 in. above the finished floor in the topmost story to be served, with openings for mail in each story.

(D) Mail Box—1. Mail Box to be Special U. S. Mail Box, installed and fabricated to architect's special design/or:

2. Mail Box to be Standard U. S. Mail Box of stock design No. 30, or as per architect's selection, of bronze, with door, frames and mouldings of cast bronze.

(E) Mail Chute Construction—Mail Chute to be constructed of No. 20 U. S. Gauge cold rolled steel, formed in channels. Outside edge of channel to extend to edge of bronze panel moulding forming a pry-proof exterior and blockage-proof interior. Frames to be secured in place by approved locks, with keys in the hands of the Post Office, and so constructed that they can be removed easily and quickly by the authorities. Locks to be such that keys cannot be removed unless panels are locked in position.

(F) Fittings—Ceiling collar, neck band, mailing pocket, locking band and base band to be of solid cast bronze. Mailing pocket to have opening for mail of sufficient size to allow for quick depositing of mail.

(G) Finish—Channels to be a dead black, baked enamel. All bronze surfaces to be slightly oxidized and lacquered.

(H) Completion—All work to be done to the satisfaction and acceptance of the architect(s), and to be installed with the approval of the Postmaster of ..... with the understanding that the work will be in strict accordance with the Rules and Regulations of the Post Office Department.



Standard Box No. 30

Body size: 19x36x10 ins.
Mouldings, ¼ in. thick.
Constructed of No 14 gauge sheet bronze, with door, frame and mouldings of heavy cast bronze.



Model B Chute

FIRST INSTALLATION 1881 BUSINESS ESTABLISHED 1883 INCORPORATED 1909

CUTLER MAIL CHUTE COMPANY

NEW YORK OFFICE
551 Fifth Avenue

GENERAL OFFICES
Cutler Building, ROCHESTER, N. Y.
(Where All Correspondence Should Be Addressed)

AGENCIES IN PRINCIPAL CITIES

FACTORY
ROCHESTER, N. Y.

CABLE ADDRESS
"Chutler Rochester"

Copyright 1932 by Cutler Mail Chute Company

THE CUTLER MAIL CHUTE

The achievement of over fifty years' experience in meeting the exacting demands of Post Office and public use. Manufactured in our own factory—built, equipped and operated for this purpose exclusively. The only such factory in the world.

The business is limited and restricted by stringent Postal Regulations, but, centered in one establishment, it is possible to maintain the organization necessary to give to our customers, the public, and the Post Office Department a quality of work and service satisfactory to them, and to us.

This also justifies the employment of specially designed machinery by which the highest standard of quality is maintained, and the cost of production reduced to the lowest possible level.

The mail box, which is an integral part of the equipment, is furnished in a variety of forms, either from stock or special designs. By the use in part of stock models and patterns, special architectural requirements can be met at moderate cost.

The Standard Cutler Mail Chute is known as Model F. It is installed by authority of the Post Office Department and with the written approval of the local postmaster.

Contracts are written in all cases to cover the work complete, excepting the rough floor openings which are otherwise provided for, ready to be turned over to the Government for postal usage. Contracts are written on a prescribed form, with the Post Office Regulations printed upon and made a part of the contract.

While the finish is varied to meet architectural requirements, the construction of the Cutler Mail Chute is the same in all cases.



Stock Design 4083
Aluminum

Standard Finish—Steel chute channels (sides and back of chute) and subbases in dead black baked enamel; caps, duplex electrobronze plated; bases, mailing pockets and frames of glass fronts are of bronze, slightly oxidized or statuary bronze color.

Bronze Finish—Model F is also made with all exposed parts of bronze. In this construction the sides of the chute channels are covered with sheet bronze. It is not unusual to use this finish in the first story, combined with the standard finish in the upper stories.

Special Finishes—We are prepared to furnish equipment in a great variety of special finishes when required.

Aluminum and Benedict Nickel materials are carried in stock for this purpose and we have excellent facilities for producing special Baked Enamel finishes of all kinds.

SPECIFICATIONS

Note: Rough openings through floors are not included in the mail chute contract, and are otherwise provided for together with the items of general cutting, and patching and repairing of plaster.

When concrete construction is used, openings should be formed by setting centers or curb boxes when concrete is poured; 7x12 ins. for the single chute, or 7x21 ins. for the twin arrangement.



Model F
Full story

(1) Mail Chute Equipment—Mail Chutes where indicated on drawings shall be the Cutler Mail Chute Equipment. To be manufactured and installed complete, by the CUTLER MAIL CHUTE COMPANY, Rochester, N. Y., as follows:

(2) Supporting frame to be of 2x2-in. steel angles, securely fastened, extending from the floor or top of the mail box in the first (ground) story to a point 4 ft. 8 ins. above the finished floor in the .... (top) story, and there finished by neatly mitering and returning the angle across the top. This frame to be plumb and flush in all stories, and sufficiently rigid to form a suitable support for the Mail Chute. Angles to be given one shop coat. Finishing coats to be applied by others.

(3) Furnish and erect on the steel frame described above (one) Cutler Mail Chute, Model F, and (one) (special) U. S. Mail Box. The Mail Box to be located in the first (ground) story, and the Mail Chute, properly connected with and extending from the top of the Mail Box through .... stories and 4 ft. 7 ins. into the .... (top) story, with openings for mail in each of these stories.

(4) Mail Chute to be constructed of No. 20 U. S. gauge cold rolled steel, formed in channels with removable panels of rolled crystal glass set in frames of bronze, and secured in place by standard U. S. Mail Chute locks, with keys in the hands of the Post Office Authorities. Steel chute channels to have an inwardly projecting rib to form a seat for the removable panels and a projecting flange to cover the joint between the panel seat and the panel to prevent tampering. Mailing pockets to be provided with a guard located 2½ ins. below the visible opening to prevent the introduction of newspapers, or loosely folded matter, and to have means of closing the opening, operated from the inside, and accessible to authorized persons only.

(5) Mail Box to be of design No. 4165 (buildings in Modernistic style, No. 4038) 37x21½x11¼ ins. over all, electro-bronze plated, with mouldings of bronze. Finish of Mail Chute in all stories to be standard—steel chute channels and subbases in dead black baked enamel with other fittings in bronze. All bronze surfaces to be finished slightly oxidized and lacquered.

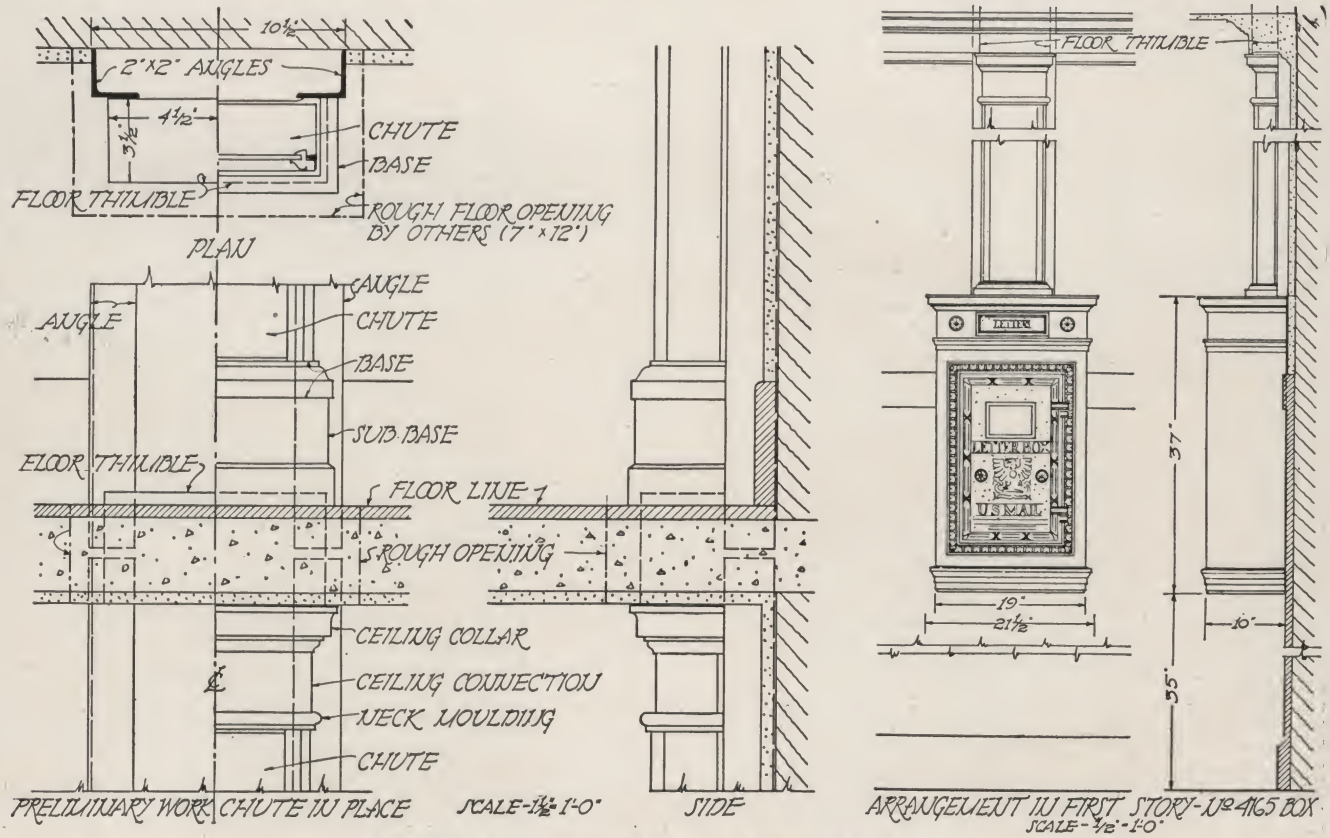
(6) Work to be done to the satisfaction and acceptance of the architects, ...; in strict accordance with the regulations of the Post Office Department, and installed with the approval of the Postmaster of ..... Any and all defects in workmanship or material developing within one year from date of completion to be made good without charge.

Note: Except where cost is the primary consideration we recommend the use of bronze mail boxes with exposed parts of the chute in the ground story also of bronze. In such cases substitute the following paragraph No. 5A for paragraph No. 5 above.

(5A) Mail Box to be of bronze from design No. .... Exposed parts of Mail Chute and supporting angles in first story to be of bronze; construction and finish of Mail Chute in upper stories to be standard—steel chute channels and subbases in dull black enamel with fittings in bronze. All bronze surfaces to be finished slightly oxidized or statuary bronze color and lacquered.



Semi-special Design No. 4119 Bronze



General Installation Details of Cutler Mail Chute

CUTLER TWIN CHUTE EQUIPMENT

For buildings in which large quantities of mail originate, Twin Chute Equipment is recommended. By closing the mailing openings on each Chute in alternate stories, the mail is divided between the two Chutes and the possibility of congestion is greatly lessened.

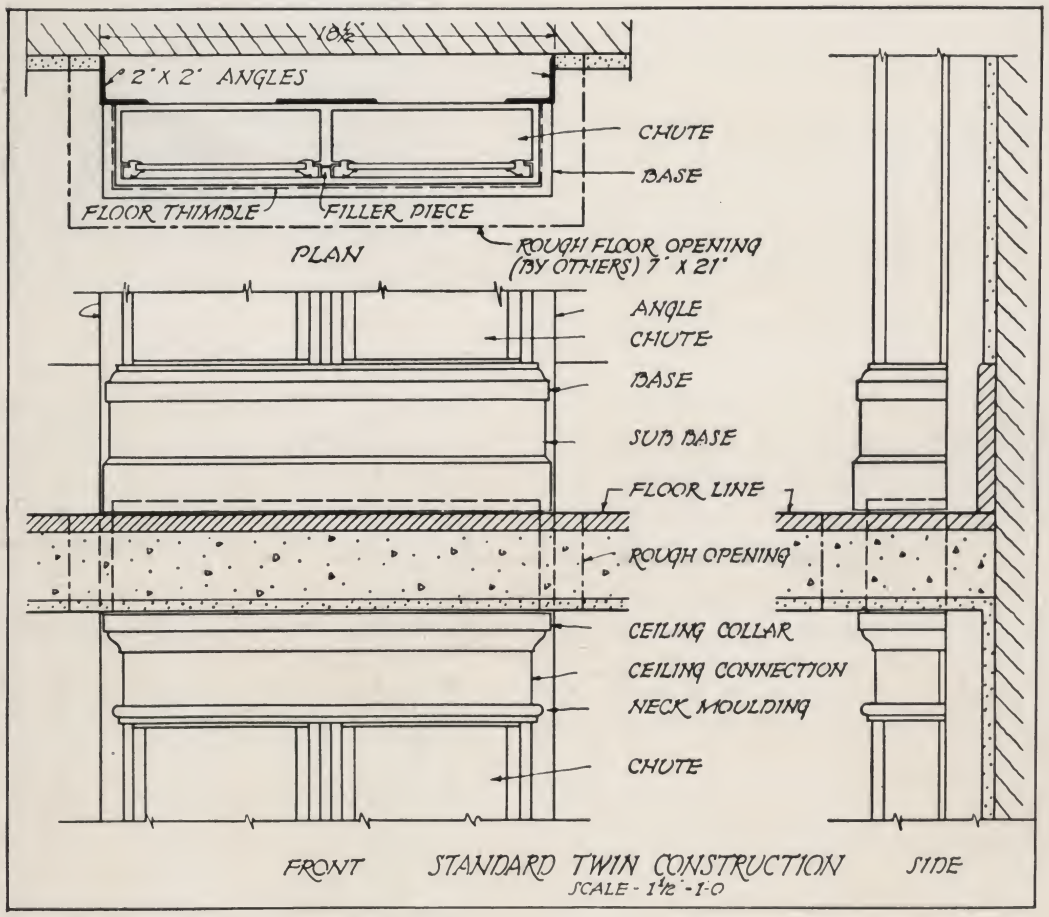
Twin Chute Equipment also makes it possible to close one Chute temporarily for cleaning or repairs, while the service is continued without interruption, by means of the other.

Recent refinements in this construction have reduced the space occupied and greatly improved the appearance.

At least one pair of Twin Chutes should be specified for buildings of large area, or twelve or more stories in height.

In buildings of unusual area or height it is usual to install from four to eight Chutes, depending on the conditions.

We offer our services and experience in determining the number of Chutes and the Mail Box capacity required in any building.





Standard Twin, Model F

Specification and Estimates

By specifying the Cutler Mail Chute by name misunderstandings and controversies are avoided. Estimates will be furnished in advance when desired and, if preferred, a stated sum may be set aside to cover this item.

Facilities and Experience

Our organization, facilities and over fifty years of experience are at the disposal of architects and others interested. Correspondence is invited, and our representatives and agencies in the principal cities of the United States will be glad to assist in every way.

UNITED STATES MAIL CHUTE CORPORATION

TELEPHONE
ALgonquin 4-1830, 4-1831

58 West 15th Street
NEW YORK, N. Y.

AGENCIES IN
PRINCIPAL CITIES

Service

It is our desire to co-operate with the architect and contractor in every way and to have them utilize the experience and facilities of our organization in dealing with any problem involving the selection and installation of mail chutes and equipment.

Write to us for any information regarding cost of installation, or your own particular problems.

IMPROVED CONSTRUCTION OF U. S. MAIL CHUTES



Model M
Twin Style

The construction of the interior of U. S. Mail Chutes is such that there can be no impediment to its successful operation.

The process whereby the channels are practically embedded in the panel frame makes the interior of the chute equivalent to one-piece construction in effectiveness. This construction eliminates crevices and precludes blockage in the chute.

The panels are composed of special bronze moulding and ¼-in. clear polished plate glass which permits observation of the passage of the mail. These panels are absolutely pryproof and are secured by special locks. The simplicity with which these glass panels can be opened by authorized persons for cleaning is clearly shown at the right.

The incorporation of the letter-drop *in the locking bar* is an exclusive and patented feature of U. S. Mail Chutes and results in an appearance of trimness and beauty not previously attained. The Model M Chute, shown at the left, is newly designed to conform with the modernistic trend in architecture.

Officially Approved by the United States Post Office Department

United States Postal Service Regulations call for strict observance of their requirements. UNITED STATES MAIL CHUTE CORPORATION equipment has been officially approved by the United States Post Office Department.

Conforms with the Specifications of New York Building Congress

All UNITED STATES MAIL CHUTE CORPORATION equipment is manufactured strictly in accordance with requirements of Part B, New York Building Congress Standard Specifications for Mail Chutes.

Single and Twin Chutes

In buildings of moderate size our single chute will often suffice, but in large buildings where a heavy deposit of mail makes the single chute inadequate, our twin chute, with openings for mail on alternate floors, has the necessary capacity and eliminates overcrowding or congestion of either chute.



Stock Designs and Special Finishes

In addition to stock designs and patterns, U. S. Mail Chutes and equipment can be supplied in any finish the architect or owner may desire in order to conform with the decorative scheme of the building in which the installation is made.





Model A
Single Style

THE ACME CHANGEABLE SIGN COMPANY

Manufacturers of Building Directories and Bulletins Changeable Letter Signs, Bronze Tablets and Name Plates

214-216 East 37th Street, NEW YORK, N. Y.

Products

CHANGEABLE STRIP and CHANGEABLE LETTER BUILDING DIRECTORIES.

CHANGEABLE INDOOR and OUTDOOR ANNOUNCEMENT BOARDS.

CORK BULLETINS, MENU BOARDS, STATISTICAL BOARDS, ROSTERS, CLUB HANDICAP BOARDS, IN AND OUT BOARDS, DESK NAME PLATES.

REFLECTOLITE ELECTRIC SIGNS, BRONZE TABLETS and LETTERS.

Uses

For Office, Loft, Business and Public Buildings, Lodges, Clubs, Churches, Hospitals, Armories, Fire Houses, Schools, Private Corporations, etc.

Building Directories

Frames are made in bronze, steel, iron, wood, etc. Panels and door frames are made of steel with ⅛-in. polished plate glass in doors. Name strips are made of flexible cardboard, covered with black paper and embossed with white letters.

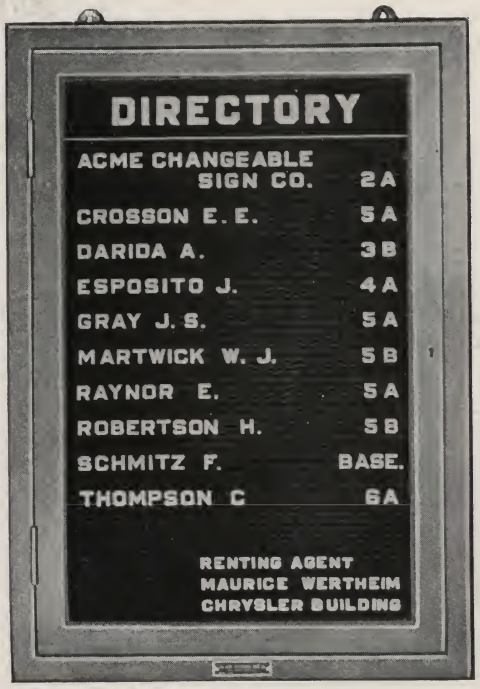
The name strips are lettered perfectly as to alignment and as the names are machine embossed with perfect dies, the characters are clean cut and will not peel off.

TOTAL NAME STRIPS IN ACME BUILDING DIRECTORIES

Using the following size strips		1/16 in.	⅜ in.	⅝ in.
Each panel size	7½ in. wide x 20 in. high	64	53	32
	7½ in. wide x 26 in. high	83	69	41
	7½ in. wide x 32 in. high	102	85	51

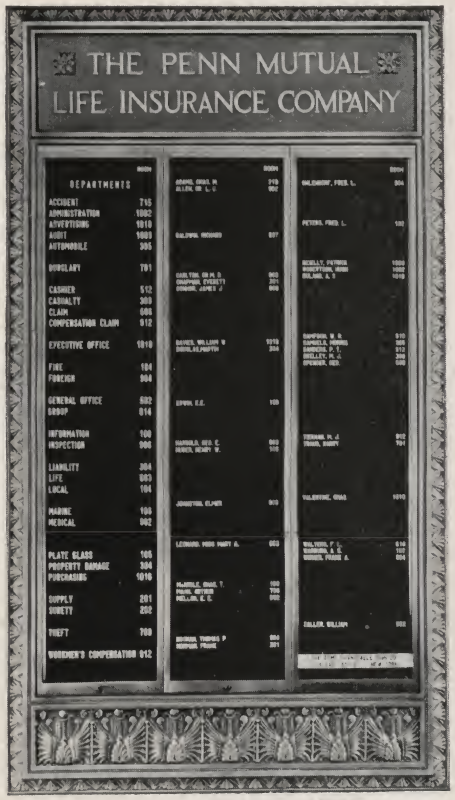
Changeable Letter Type Directories

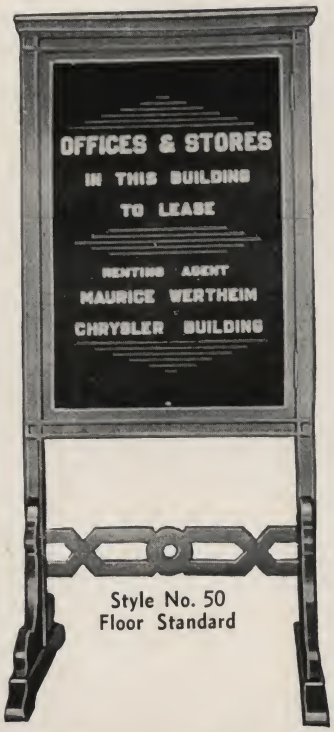
Using ¾, ½ and ⅜-in. celluloid letters. Frames made in metal or wood. The grooved, felt covered back board is made of kiln dried bass wood, grooved accurately in ¼-in. spaces.



Style No. 35
Changeable Letter Type Directory

Right:
Style No. 60
Name Strip Building Directory

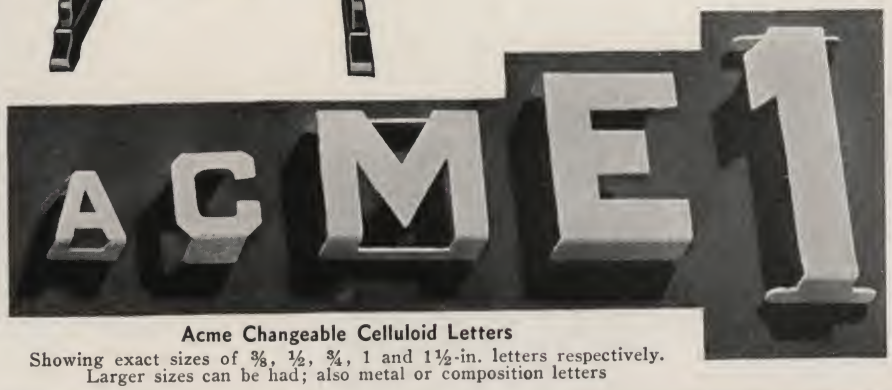




Style No. 50
Floor Standard

Floor Standard

Can be made in metal or wood, using either changeable letters or embossed name strips. Suitable for hotels, clubs, etc., where the wall type is not desired.



Acme Changeable Celluloid Letters

Showing exact sizes of ⅜, ½, ¾, 1 and 1½-in. letters respectively. Larger sizes can be had; also metal or composition letters



Reproduction of Acme Name Strip—Actual Size, 7½x⅜ In., Used in Our Standard 7½-in. Wide Panels

ADVANCE DIRECTORY COMPANY

Manufacturers of Bulletin Boards and Building Directories

303 Fourth Avenue, NEW YORK, N. Y.

Products

BULLETIN BOARDS, Loose Letter Type, for Interior and Exterior Use; ANNOUNCEMENT BOARDS; MEMORIAM BOARDS; GOLF HANDICAP BOARDS; ROSTERS and BUILDING DIRECTORIES; CORK BULLETINS and STRIP TYPE DIRECTORIES.

Specializing in Bulletin Boards

The facilities of this Company are devoted exclusively to the production of Bulletin Boards of all types and Building Directories. We specialize in work made to architects' details and to fit special spaces and conditions. We will gladly co-operate with architects in working out special details and furnish information on space requirements of special inscription or lists of names, etc.

We also have stock designs of frames and stock bases for free standing boards.

Bulletin Boards—Changeable Letter Type for Indoor or Outdoor Use

Used in hotels, office buildings, public buildings, churches, banks, clubs, schools, colleges, etc., for sales charts, announcements, hymn boards, etc.

Frames—Wide variety of designs and materials, glazed or unglazed as desired.

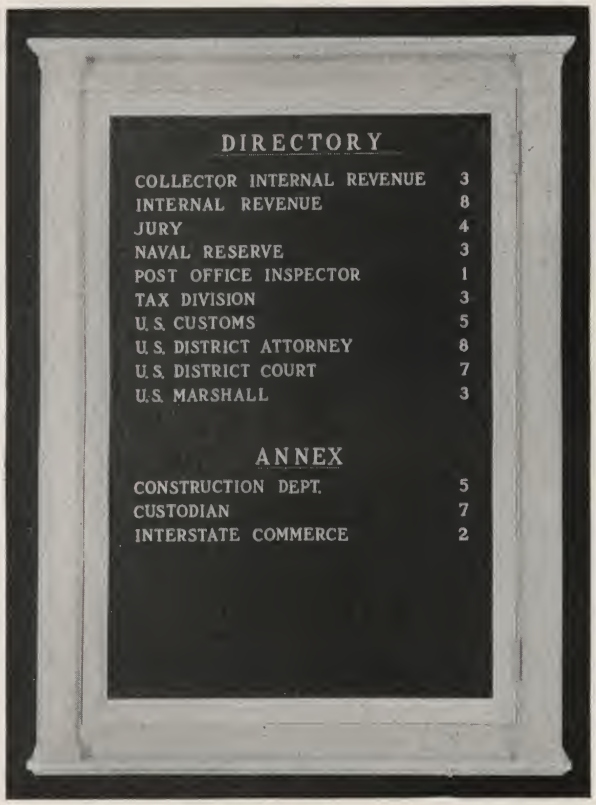
Grooved Boards—Boards are made of kiln dried wood, properly reinforced, covered with best quality cloth of standard or special colors.

Interchangeable Letters

"Advance" Die Cast Aluminum Letters—Letters and prongs die cast in one piece. Prongs are invisible from any angle when letters are placed in grooved board. They are easy to insert, shift or remove, well designed, clean cut and legible. The face of the letters are flat, with a baked semi-flat white finish, edges beveled and finished black which throws the letters in strong relief. *Guaranteed against chipping, breakage or discoloration.*

Sizes of Letters—¼, ⅜, ½, ¾, 1, 1½, 2 and 2½ ins.

"Advance" Double Wing Celluloid Letters—Clean cut of heavy gauge celluloid, sizes ¼, ⅜, ½, ¾, 1, 1½ and 2¼ ins.



A Wood Frame Bulletin Board



The Letter in Place

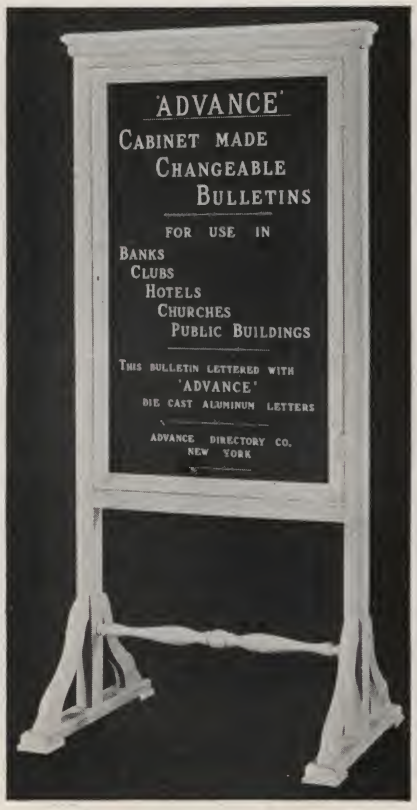
Left: Section Through the Board



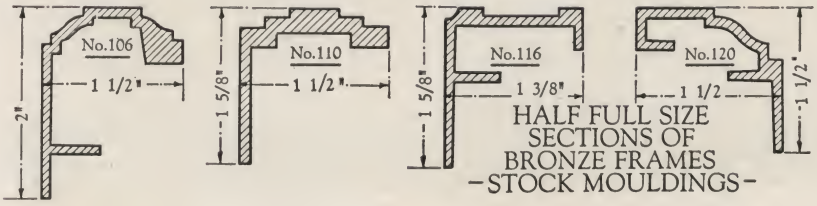


Back of "Advance" Die Cast Letters Showing Integral Prongs

Details of "Advance" Letters



A Standard Free-standing Board





Actual Size of "Advance" Strip Type Names (¼-in. Letters) for Directories

A Few "Advance" Installations

Carnegie Hall, New York, N. Y.
Steinway Hall, New York, N. Y.
Chanin Building, New York, N. Y.
New Waldorf-Astoria Hotel, New York, N. Y.
Ambassador Hotel, Atlantic City, N. J.
Hotel Roosevelt, New York, N. Y.
Tudor City, New York, N. Y.

Church of the Heavenly Rest, New York, N. Y.
Cathedral of the Incarnation, Garden City, L. I.
Westminster Presbyterian Church, Albany, N. Y.
Yale University
Cornell University
Massachusetts State College, Amherst, Mass.
University of Minnesota
New York Athletic Club, New York, N. Y.

Columbia University
Polytechnic Institute
State Office Building, New York, N. Y.
Buffalo Post Office
Buffalo Society of Natural History
Pennsylvania Museum of Art, Philadelphia, Pa.
Columbia Broadcasting System, Inc.

AKINS & CLARK INC.

OPERATING

AKINS PRODUCTS INC.
U. S. CHANGEABLE SIGN CO., INC.
(ESTABLISHED 1890)

ADANCRAFT CORPORATION
B. L. AKINS, INC.
(ESTABLISHED 1918)

UNITYPE CHANGEABLE SIGN CO.
W. L. CLARK COMPANY, INC.
(ESTABLISHED 1914)

TELEPHONE
WIsconsin 7-3131

136 West 42nd Street, NEW YORK, N. Y.

Products

BUILDING DIRECTORIES; FLOOR DIRECTORIES; ELEVATOR DIRECTORIES; CLUB ROSTERS; GOLD HANDICAP BOARDS and IN-and-OUT BOARDS; CHANGEABLE BULLETINS and ANNOUNCEMENT BOARDS; CHURCH BULLETIN BOARDS.

ILLUMINATED CROSSES.

Also Reflectorlite Electric Signs; Cork Bulletin Boards; Bronze Tablets; Bronze Letters; Floor Directional Arrows, and products of the U. S. Changeable Sign Co., Inc., the pioneer building directory company established in 1890.

Wide Scope of Adaptability

Building Directories and Floor Directories—For office and loft buildings, banks, hotels, clubs and fraternal organizations, department stores, hospitals, schools, colleges, business departments, public buildings and wherever alphabetical or group listings are required.

Bulletin and Announcement Boards—For hotels, churches, railroad and steamship schedules, theater ticket agencies, rosters, menus, programmes, etc.

Statistical Boards—Sales record tabulations, factory production records, hospital and institutional census records, fire department calls, competitive records, stock quotations, etc.

Club Boards—Rosters, golf handicap boards, in-and-out, changeable letter bulletin boards, and cork bulletins for thumbtack notices.

AKINS TYPE STRIP BUILDING DIRECTORIES

This new and improved directory has been developed by our organization and is the result of our many years of manufacturing directory boards.

Patented October 20, 1925, No. 1557542 and February 16, 1926, No. 1573126.

Advantages

Construction so simple no supervision required for making changes. In making changes, it is only necessary to remove the doors with a key, leaving all name strips in place, so that operator is always working from the front, making alphabetical mistakes improbable. This method of making change is a distinct advance over any other system, since it permits changes to be made with one operation, allowing the directory board to be in full use while changes are being made. Any door may be removed and cleaned without disturbing the names.

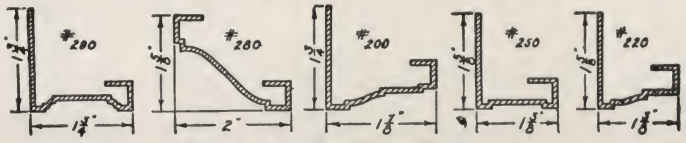
Changes are supplied promptly at nominal cost.

Service

Directories are sold outright and service maintained, or furnished on rental basis.



Cast Bronze Directory, Style No. 306
36 in. wide x 43 in. high, capacity, 265 names



Bronze Moulding Stock Designs

Frame Designs and Finishes

Frames for the various types of directory and bulletin boards are furnished either in approved stock designs or in accordance with the architect's specifications. Special designs are created when desired. They can be had in bronze, wood or iron in any finish required. We supply our systems without frames if so desired.

Specifications

(1) Frame—Frame to be constructed of bronze (steel, iron or wood), workmanship and design to meet approval of architect. Title of directory shall be in bronze.

(2) Fillers—Any door shall be removable, allowing easy access to change name strips, without disturbing balance of directory. Name strips to remain in directory while changes are being made. Name strips shall be held in place by a steel backboard, covered by locked doors of cold rolled steel finished in baked enamel (or bronze). Doors to be glazed with beveled plate glass.

(3) Name Strips—Name strips to be of flexible board, covered with dull black paper.

Names to be made with white embossed letters, machine spaced, alignment to be perfect and all lettering uniform.

(4) Service—Must be accurate and prompt. Directory to be purchased outright (furnished on rental basis).

AKINS PRODUCTS, INC. 118

⅜-in. Strip, ¼-in. Letters for Akins Type Strip Directory, Actual Size Shown
Also made ⅝ in. wide with ⅜-in. letters and $\frac{5}{16}$ in. wide with $\frac{3}{16}$-in. letters

SIZE AND NAME CAPACITIES OF AKINS TYPE STRIP DIRECTORIES

Fillers 7½ in. wide x 26 in. high								
Number of fillers	2	3	4	5	6	7	8	9
Width, in.	15	22½	30	37½	45	52½	60	67½
Name capacity, ⅜-in. strips	75	125	175	250	300	350	400	450

Fillers 7½ in. wide x 32 in. high								
Number of fillers	2	3	4	5	6	7	8	9
Width, in.	15	22½	30	37½	45	52½	60	67½
Name capacity, ⅜-in. strips	125	195	265	335	405	475	545	615

Table figures actual name capacities ⅜-in. strip. Alphabet space allowed.

GREELEY CHANGEABLE LETTER AND ELEVATOR DIRECTORIES

Greeley Changeable Letter Directories

Original changeable letter system, in use over 40 years and still giving excellent service, testifying to its durability.

In making changes, entire equipment is under complete control of owner—no outside assistance needed.

Backboard—Solid or in interchangeable strips; each strip holding a name or line of reading matter, and the whole grooved horizontally and covered with durable broadcloth. Wood used is well seasoned, kiln-dried, free from knots, ribbed and reinforced to prevent warping.

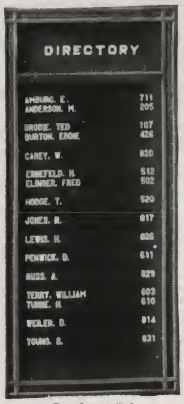
Broadcloth—Of fine durable quality, all wool—black, blue, green or special colors.

Changeable Letters—Type "B"—Convex faced and stamped in one piece (including tongues) from half-hard brass and covered with a special ivory white enamel, guaranteed against discoloration, cracking or chipping. Letters are set and held in place by tongues top and bottom; can be set in upright position only and will align perfectly.

Sizes—¼, ½, ¾, 1 and 1½ in.



Type B



Style 376



Style 377

SIZE AND NAME CAPACITIES OF CHANGEABLE LETTER DIRECTORIES TYPE B LETTERS

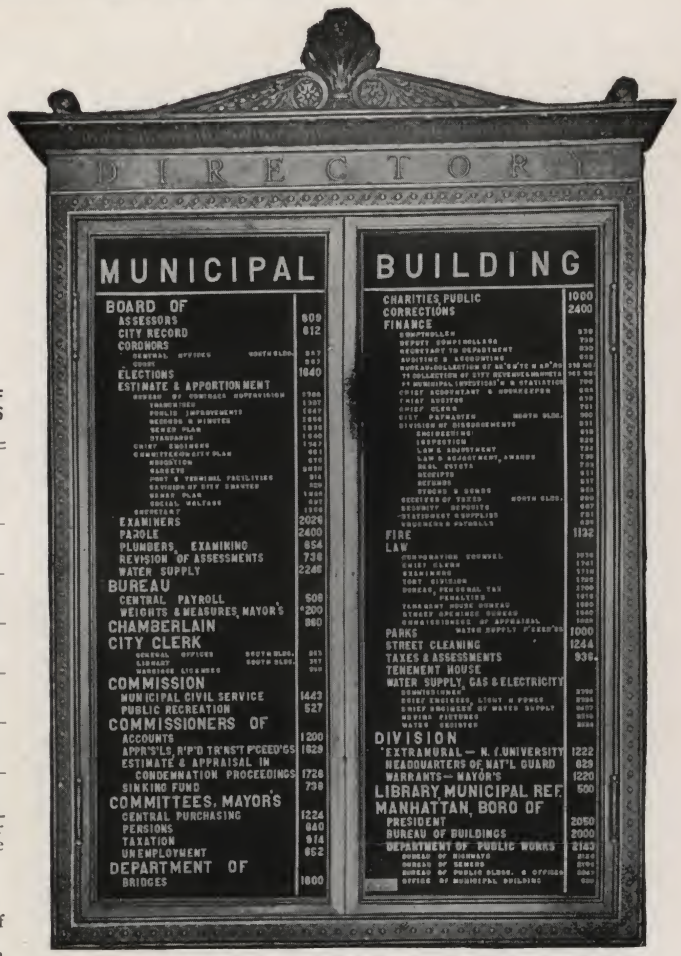
Sight size, in.	Size of letters	Number of col.	Name capacity
9½x21½	¼ in.	1	40
	½ in.	1	25
19½x29½	¼ in.	2	75
	½ in.	2	50
29½x35½	¼ in.	4	200
	½ in.	3	100
29½x49½	¼ in.	4	300
	½ in.	3	150
39½x53½	¼ in.	5	400
	½ in.	4	250
49½x61½	¼ in.	6	600
	½ in.	5	350

Allowance has been made for title of building in suitable size letters.

Elevator Directories

Style No. 376—Lists names of tenants in smaller buildings.

Style No. 377—For inspection card and listing profession or business of tenant and regulation card in one frame, combining requirements in elevator of modern office building.



Changeable Letter Type Directory Installed in the Municipal Building, New York, N. Y.

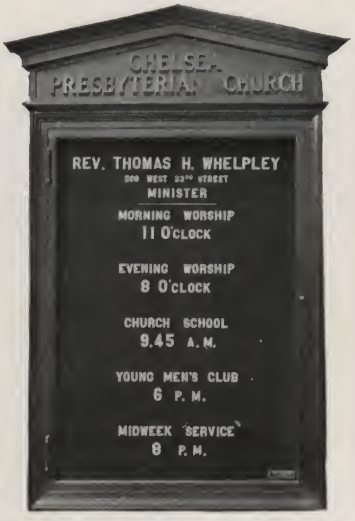
Special design cast bronze frame, using broadcloth covered grooved backboard and Type B letter

Changeable Letter Church Bulletin Boards and Illuminated Crosses

A wide variety of solid bronze, Clark's *"Unitype"* bronze or copper, kalamein and wood church bulletin boards for either wall or lawn erection—either with or without illumination and offering a wide selection of styles and sizes of changeable letters for either the type "B" grooved felt or enameled metal sign sections.

Illuminated Crosses—Special literature on brass and bronze illuminated crosses—indoor and outdoor—furnished on request.





Typical Changeable Letter Church Bulletin Boards

Complete information on request

A Few Recent Installations of Building Directories

Over 5000 in use. Some for 42 years. Many in foreign countries.

New York

Empire State Bldg.
American Radiator Bldg.
American Express Bldg.
New York Central Bldg.
Graybar Bldg.
New York Telephone Bldg.
Standard Oil Co.
Bowery Savings Bank
Municipal Bldg.
Pershing Square Bldg.
Wall-Hanover Bldg.
Johns-Manville Bldg.
Pennsylvania Hotel
Lord & Taylor
One Park Avenue Bldg.
One Wall Street
No. 2 Park Avenue Bldg.
Salmon Tower
French Plan Bldg.
Gimbel Brothers
Saks & Co.
Garment Center
Bank of Manhattan Bldg.
Squibb Bldg.

Detroit

Fisher Bldg.
Book Tower
First National Bank
Union Trust Bldg.

Philadelphia

Public Ledger Bldg.
Gimbel Brothers
Lincoln Liberty

Philadelphia (Continued)

Bell Telephone Co.
Liberty Title & Trust Co.
Philadelphia Convention Hall

Brooklyn

Williamsburg Savings Bank
Albee-Keith Theatre
Court-Remsen Bldg.
Municipal Bldg.
Court-Montague Bldg.

Newark

L. S. Plaut & Co.
Federal Trust Bldg.
Industrial Office Bldg.
Military Park Bldg.
National Newark and Essex Bank Bldg.

Miscellaneous

Industrial Trust, Providence
Administration Bldg., Pittsburgh
Niels Esperson Bldg., Houston, Tex.
Union Central Life Ins. Co. Bldg., Cincinnati
Union Station, Chicago
First National Bank, Boston
Barnett Nat. Bank, Jacksonville
Gimbel Brothers, Pittsburgh
Grant Bldg., Pittsburgh
State Office Bldg., Albany
Capitol Bldg., Harrisburg
Chesapeake & Potomac Telephone Co., Richmond
75 Federal St. Bldg., Boston

J. A. WEBER, Pres. and Treas.

TELEPHONE
Buckingham 2277

R. W. CLARK MFG. CO.

R. G. MOLITOR, V.P. and Sect'y

Building Directories and Bulletin Boards

4311 Ravenswood Avenue, CHICAGO, ILL.

Products

BUILDING DIRECTORIES for Lobby or Floors: Clark Liberty (Interchangeable Letter) and Clark Embossed Strip and Gummed Letter Strip.

Also Rosters, Bulletin and Announcement Boards, Desk and Teller Name Plates, and Cork Tack Boards.

Clark Directories

Clark Liberty Directory (Interchangeable Letter)—Little or no up-keep cost; immediate service to tenant; letters and covered strips can be re-used many times; practically same wall space required as for gummed-strip using same size letter. Letters made of best white celluloid under Clark patent.

Embossed Strip and Gummed Letter Strip

Directories—Also sold outright. Strips furnished at low cost. The saving to the owner is about 85% of the annual rental charge. Strips fit easily into groove and are held in position with felt covered back.

Styles and Sizes—All sizes, styles and finishes supplied—ornamental iron, plain or ornamental extruded bronze, wood filled bronze, and wood in either oak, walnut, mahogany or ebony finish.

Standard width of sections: for changeable strip (embossed strip), 7½ in.; for Clark Liberty (interchangeable letter) 7½ in. with ¼-in. letters and 12 in. with ⅜-in. letters. Sections also made 15 in. wide for ½-in. letters.

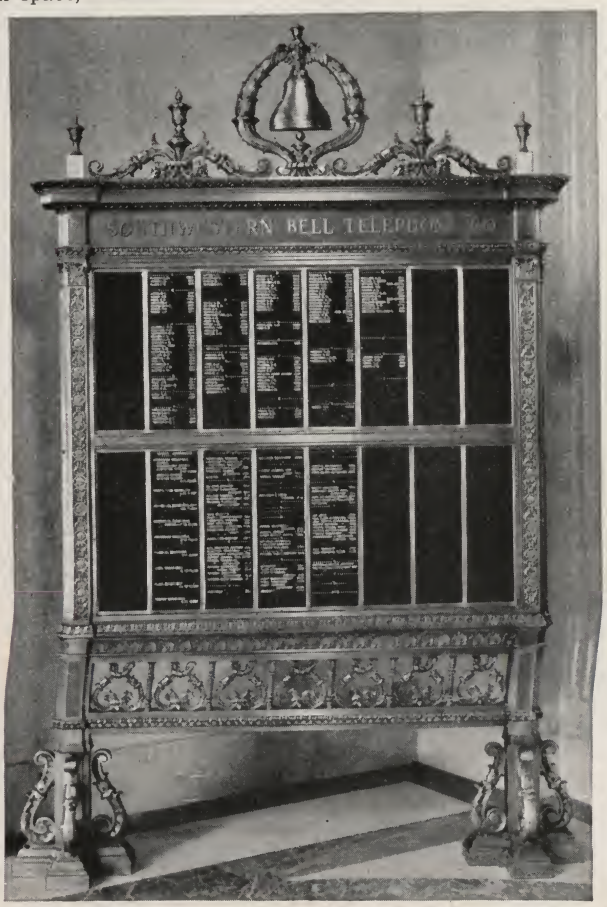
Any convenient heights can be made.

Catalogue and additional information on request.

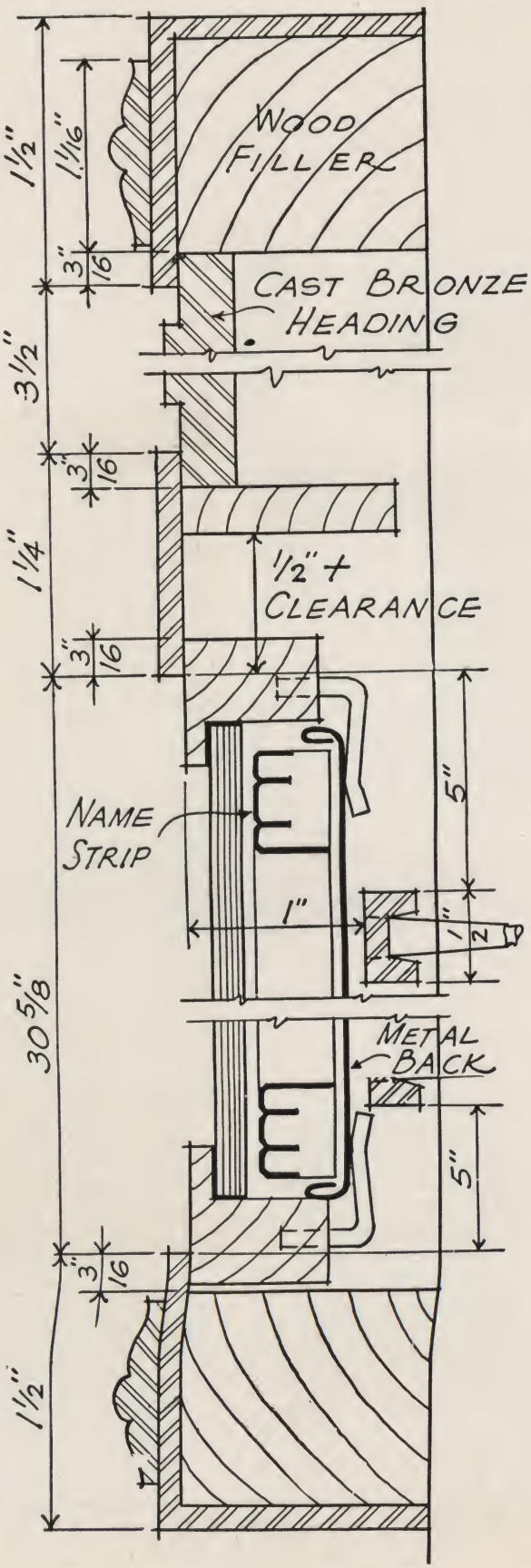
Estimates

For all ordinary buildings two names to the room will be the approximate capacity of directory required. In the case of special buildings, more or less, according to purpose of the building.

In writing for estimates, state total number of names board must hold; material; style; finish; and, particularly, available wall space, if limited.



16-section Clark Liberty Directory, Special Bronze Frame



THE TABLET & TICKET CO.

Building Directories and Changeable Bulletin Boards

1021 West Adams Street, CHICAGO, ILL.

115 East 23rd Street
NEW YORK, N. Y.

318 Little Building
BOSTON, MASS.

607 South Hill Street
LOS ANGELES, CAL.

407 Sansome Street
SAN FRANCISCO, CAL.

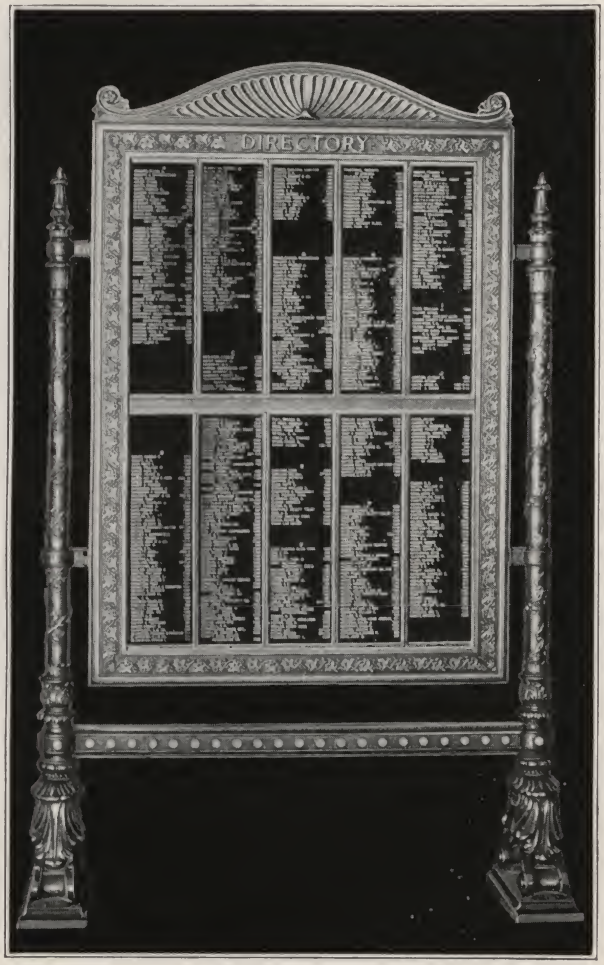
SALES REPRESENTATIVES

BALTIMORE, MD.
BUFFALO, N. Y.
CINCINNATI, OHIO
CLEVELAND, OHIO
DETROIT, MICH.
KANSAS CITY, MO.
MILWAUKEE, WIS.
MINNEAPOLIS, MINN.
NEW ORLEANS, LA.
PITTSBURGH, PA.
PORTLAND, ORE.
ST. LOUIS, MO.
ST. PAUL, MINN.
SEATTLE, WASH.
SPOKANE, WASH.
WASHINGTON, D. C.

Products

DIRECTORIES, BULLETIN BOARDS, SIGNS:
Building Lobby Directories; Floor Directories; Business Directories; Church Directories; Store Directories; Club Membership and Handicap Boards; Changeable Letter Signs and Bulletin Boards; "In" and "Out" Boards; Hospital Register Boards; Interior Electric Directional Signs; Changeable Desk and Grille Name Plates; Willson's Gummed Paper Letters and Figures; Self-spacing Pyralin Sell-U-Letters; Embossed and Printed Labels and Seals.

SINCE 1870



(A) Building Directories—Service or Sale

(A-1) Service—THE TABLET & TICKET Co. will install its directory equipment as specified, furnish name strips, and keep the directory up to date, making name changes as ordered, and render complete maintenance service. The system will be installed under a five-year contract at an agreed annual fee based upon the name capacity of the equipment. No charge is made for the equipment.

(A-2) Frames by Others—When ornamental cast frames are furnished by others, we will supply sections only, with strip service and maintenance service, making proper allowance in the service charge for the frame.

(A-3) Strip Service—In cities where our main plant, factory branches or strip service stations are located, name changes are inserted in 24 hours; mail orders are invariably forwarded same day as received.

(A-4) Maintenance—A staff of men visit our directories periodically to see that they are kept clean, in repair and in good working order. There is no additional charge for this service.

(A-5) Sale—THE TABLET & TICKET Co. directories may be purchased at a very reasonable cost; in this case regular Tablet & Ticket Directory service may be had at special rates.

(B) Description of Office Building Directory

(B-1) The Directory—Each directory consists of two or more units, the frame and one or more removable sections.

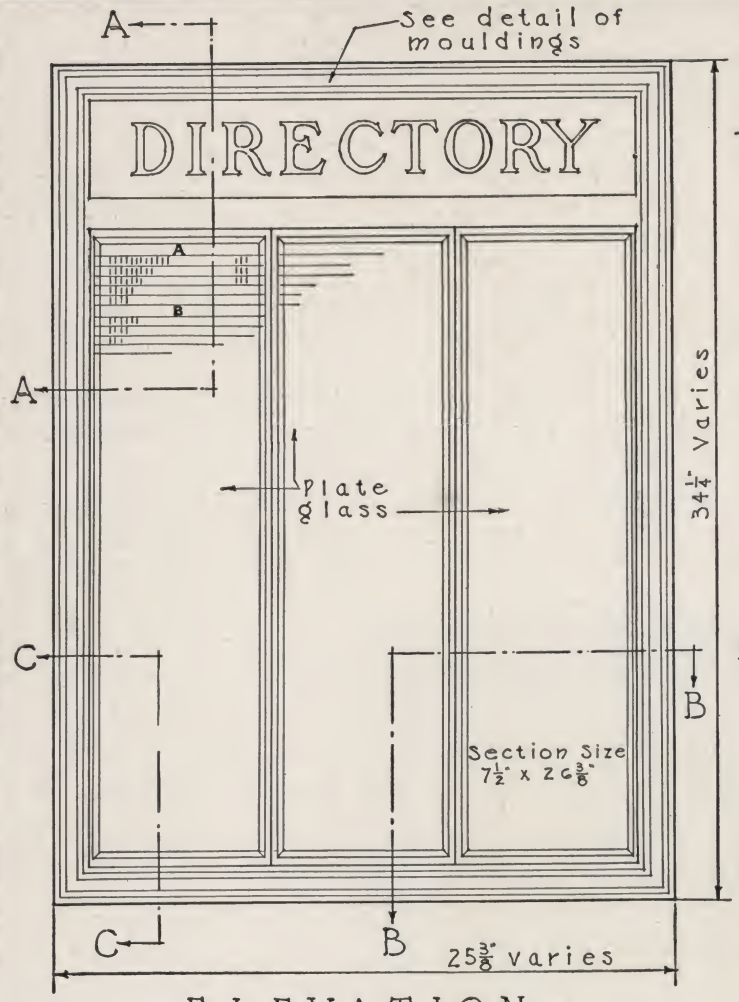
(B-2) Frames—Our frames can be furnished of ornamental cast bronze, or white metals, of any of five styles of extruded Benedict nickel, five styles of extruded bronze, one style of extruded aluminum, three styles of kalamein moulding, or two styles of ornamental iron moulding.

These can be finished in natural polish, or the various plated finishes as desired. Among these will be found a style to harmonize with any bronze or ornamental iron work. Where special frames are included in the work of the ornamental iron or bronze contractor, Tablet & Ticket sections only are specified.

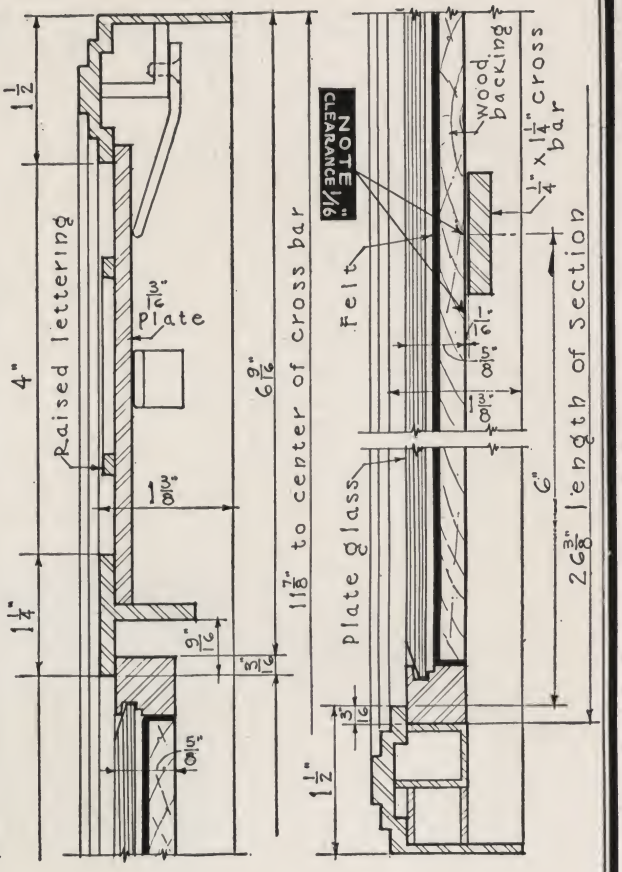
(B-3) Headings—Two styles of headings are available—a cast tablet with cast letters or a black background with white letters covered with plate glass.

(B-4) Sections—Each section is a unit in itself. Section frame is of extruded bronze, steel, nickel, or special white metals to match frames, with beveled plate glass front. The strips fit into grooves in each side of the section frame and are held flat and in perfect alignment against the plate glass front by the padded removable back piece.

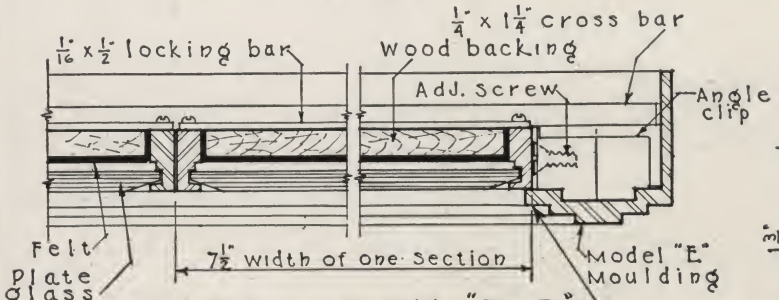
Standard sections are 7½ ins. wide and use No. 1 strips as illustrated. The chart on the following page shows the strip and name capacities of different length sections. Special size sections with appropriate strips to fit special frames can be supplied.



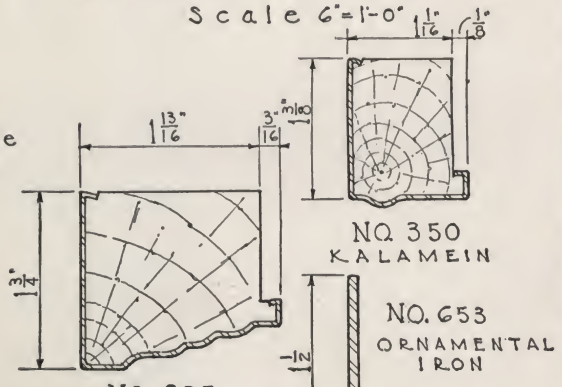
• ELEVATION •
Scale 1½" = 1'-0"



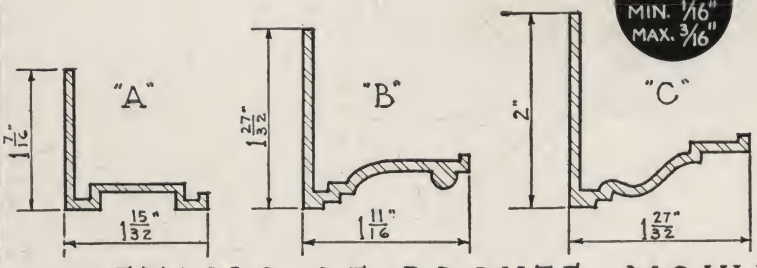
• SECTION • AT "A-A" • • SECTION • AT "C-C" •
Scale 6" = 1'-0"



• SECTION • AT • "B-B" •
Scale 6" = 1'-0"



NOTE RECESS MIN. 1/16" MAX. 3/16"



• DETAILS • OF • BRONZE • MOULDINGS
• STOCK • DESIGNS •
Scale 6" = 1'-0"

The TABLET & TICKET CO.
SINCE 1870
NEW YORK CHICAGO SAN FRANCISCO

TYPICAL STANDARD THREE-SECTION DIRECTORY

(B-5) Name Strips—An actual size illustration of No. 1 name strip is shown on first page. The strips are pliable black cardboard of special texture, 3/8 in. wide, 7 1/8 ins. long, lettered with 1/4-in. glazed white gummed letters, providing sharp contrast and unusual legibility.

The strips slide easily up and down in the side grooves making it convenient to remove or change a single strip without disturbing the others.

(B-6) Name Capacities—In estimating the size directory equipment required, we advise allowing two names for every office to provide proper expansion margin. The following chart indicates the normal name listing capacity of various combinations of standard sections, after allowing for alphabetical headings and blanks necessary to insure proper appearance.

NAME CAPACITIES OF STANDARD SECTIONS

Number of sections	Length of section, in.			
	18 1/2	26 3/8	32 7/8	40 3/8
3 sections	50	100	150	200
4 sections	100	150	200	300
5 sections	150	200	250	400
6 sections	200	250	300	500
7 sections	.....	300	400	600
8 sections	.....	400	500	700
9 sections	.....	450	600	800
10 sections	.....	500	700	900
(Total strips per section)	45	64	80	100

(B-7) Specification—*(1) Type*—A directory of removable section, changeable name strip type, as manufactured by THE TABLET & TICKET Co., shall be provided.

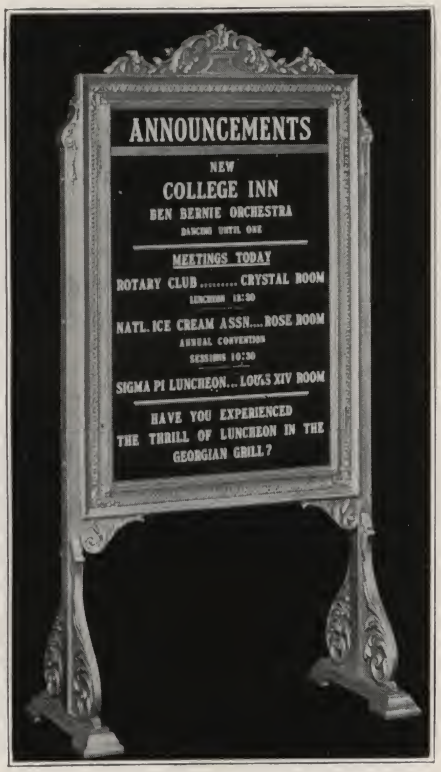
(2) Capacity—The directory shall be of a capacity to conveniently hold one hundred (or whatever required) names plus necessary alphabets.

(3) Frame—The master frame shall be of extruded (see B-2) TABLET & TICKET Co. Model (see mouldings on previous page) with corners hand mitered and welded.

(4) Sections—Three removable sections (or whatever number selected) each 7 1/2 in. x 26 3/8 in. (or whatever size required) shall be furnished. The section frames shall be of extruded metal to match the master frame.

(5) Name Strips—Name strips shall be of waterproofed, flexible cardboard, properly covered and machine lettered.

(6) Service—In New York, Chicago, San Francisco, Seattle or Los Angeles, name changes must be inserted in the directory within twenty-four hours of notification by building manager. In all other cities, strips must be mailed same day order is received.



(B-8) Other Directories—Other types of THE TABLET & TICKET Co. directories are: Floor Directories, used on individual floors to show tenants of such floors; Business Directories, giving the business as well as the name of the individual or company; Church Directories; Department Store Directories for listing the locations of different merchandise departments, etc.; Golf Handicap Boards; and Club Membership Directories with our patented "in and out" feature. Specifications will be immediately furnished upon request.

(C) Changeable Bulletin Boards

(C-1) Description—The Tablet & Ticket Changeable Bulletin Boards are made in three types—(1) without glass front; (2) with stationary glass front and take-out back; (3) with hinged glass door. All have the same kind of grooved backboard.

(C-2) Frames—The stock changeable bulletin boards range in sizes from 6x10 to 28x40 ins. over all. De Luxe models may be of wood moulding or kalamein. Extruded bronze mouldings will be furnished to order. We will furnish special sizes at slightly increased cost.

(C-3) Backboards—Backboards have parallel grooves covered with best quality broadcloth.

(C-4) Standards—Stock standards are 62 ins. high, furnished in oak, mahogany, walnut, bronze or iron. Special finishes on order.

(C-5) Changeable Letters—Our changeable bulletin letters are offered in a large variety of styles, sizes, colors and materials—flat celluloid, block or Roman style, with exclusive self-spacing flanges top and bottom, sizes 1/4 in. to 2 in.; colors white, red and green; embossed celluloid, flanges top and bottom, five brilliant colors, sizes 1/4 in. to 1 1/2 in.; die-cast aluminum, with white enamel face and black bevels, sizes 1/4 in. to 1 1/2 in.

(C-6) Application—Boards are especially adapted for use in banks, hotels, theatres, clubs, hospitals, railroad stations, schools and public buildings.

(D) "In" and "Out" Boards

(D-1) Description and Application—We manufacture several styles of Changeable Name "In" and "Out" indicator boards to meet every normal requirement, and are prepared to build special "In" and "Out" boards as may be designed.

Such boards are a necessity in large offices, hospitals, etc., to keep accurate record of the movement of executives, doctors, etc.

(E) Willson's Gummed Paper Letters and Figures

(E-1) Description and Application—Willson's gummed paper letters and figures are die-cut from highly glazed gummed paper stock colors of white, red and black, but can be furnished in any desired color on special order. We have a wide range of sizes and styles of letters from 3/16 in. to 4 ins. high. These are furnished in individual envelopes as well as in small alphabet assortments and large handy box assortments to suit every need.

Paper letters and figures are used extensively in drafting rooms, for marking and lettering drawings and tracings. They photograph perfectly. Free samples will be furnished on request.

G&G ATLAS SYSTEMS

INCORPORATED

Pneumatic Dispatch Tubes

TELEPHONE
SPring 7-7800

542 West Broadway, NEW YORK, N. Y.

PNEUMATIC TUBE AGENCIES

ATLANTA, GA., The Hill R. Huffman Co., Bona Allen Bldg.
BALTIMORE, MD., Vincent D. Eastwood, Munsey Bldg.
BOSTON, MASS., Asa C. Deming, 216 Tremont St.
CHARLOTTE, N. C., R. Galloway Ross, P. O. Box 846
CHICAGO, ILL., S. I. Kaufman, 228 No. La Salle St.
CINCINNATI, OHIO, A. W. Frank, 710 Broadway
CLEVELAND, OHIO, The R. L. Queisser Co., 9105 Woodland Ave.
DALLAS, TEX., G&G Atlas Systems, 810 Main St.
DETROIT, MICH., Kennedy & Dawson, 2111 Woodward Ave.
LOS ANGELES, CALIF., J. Royden Estey, 420 East 8th St.
PHILADELPHIA, PA., Culbert-Whitby Co., 2019 Rittenhouse St.
PITTSBURGH, PA., J. R. Pitcairn, 132 Seventh St.
PORTLAND, ORE., George L. Cherry, 327 E. 25th St.
SAN FRANCISCO, CALIF., A. Richard Thorson, 383 Brannan St.
ST. LOUIS, MO., Hunkins-Willis Lime & Cement Co., Louderman Bldg.

Products

PNEUMATIC DISPATCH TUBES.
POWER-SAVING CONTROL VALVES.
CARRIERS for PNEUMATIC TUBES.

Uses

Widely separated departments in industrial plants, banks, hospitals, hotels, large offices, retailers, wholesalers, etc., are linked together so that order forms, mail, telegrams, invoices, vouchers, and miscellaneous warehouse and factory forms, even lightweight articles and containers including liquids are dispatched from one point to another in a horizontal or vertical direction. Tests have shown the mechanical messenger service provided by G&G Atlas Pneumatic Dispatch Tubes to be approximately 14 times faster than foot messengers.

G&G Atlas Pneumatic Dispatch Tubes are always on duty—equally efficient in rush or lull periods. Carriers maintain a speed of 30 ft. a second, climb no stairs, wait on no elevators, and do not add to the congestion of aisles, passageways or elevator space.

In plants or offices, where foot messengers make routine pick-up and delivery trips to all points at regular intervals, greater efficiency can be maintained with a tube system. There is no waiting for a time schedule. Each article can be dispatched and received as the need exists so as to receive instant attention.

The location of stations and conditions under which lines must be run will vary in each building, but sending and receiving stations may be located at almost any convenient point. Although the installation cost is less when building is in course of erection, this tube system may be introduced into existing structures without interrupting plant operations.

Our engineers will make a survey and offer an installation plan that conforms to existing requirements. For new plants to be constructed, it is suggested that the architect or engineer consult us so that proper space allowances be provided and a system laid out to efficiently meet individual requirements.

the G&G ATLAS PNEUMATIC TUBE SYSTEM
TRADE-MARK





Fig. 4. Central Tube Station, State Mutual Life Assurance Co., Worcester, Mass.
PARKER, THOMAS & RICE, Architects
Like a telephone switchboard, lines reach out to provide communication to all departments

Left:
Fig. 5. G&G Atlas Airtight Cabinet
One of many styles providing convenient sending and receiving stations

Special Advantages

An important feature is the G&G Atlas Power-Saving Control Valve. One of these valves is placed on each tube line where system comprises six or more lines. Independent of electrical or timing elements and completely self-contained, its use makes (a) longer lines possible; (b) prevents excessive drafts; (c) saves electrical current; (d) prevents excessive wear and tear on tubes and carriers; (e) considerably reduces size of power plant required.

Superior to spring, timed or electrically actuated devices, because it always shuts off when the last carrier discharges.

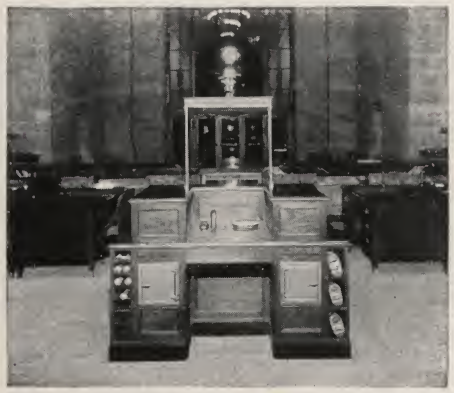


Fig. 1. "Island" Station at The Canadian Bank of Commerce, Toronto, Ont. (Ledger Dept. Toronto Branch)
DARLING & PEARSON, Architects
E. F. ABBELL, Equipment Specialist
Special cabinet contains 1¼-in. terminals and airtight terminals for 2¼-in. round and 4x7-in. oval tube lines

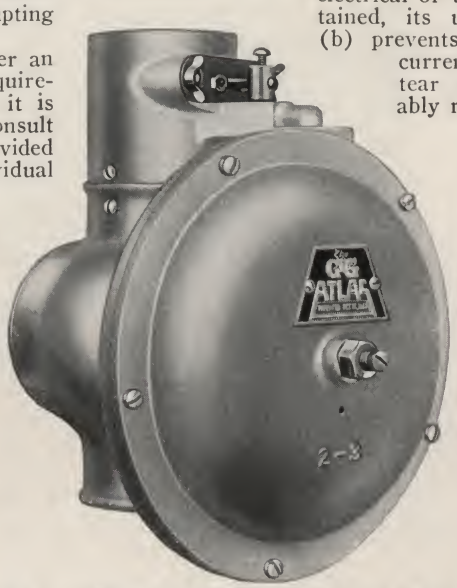


Fig. 2. G&G Atlas Power-Saving Control Valves
These valves permit pilot flow of air through line when not in use. When carrier is inserted, valve automatically opens until last carrier in that line discharges. It automatically cuts off in a long drop by gravity.
R. H. Macy & Co., New York, N. Y., uses 656 valves; Sears, Roebuck & Co., 175 valves; Montgomery Ward, 193 valves; City Bank Farmer's Trust Co., 60 valves; and the Bank of Mitsui, Tokyo, Japan, 20 valves; Stone & Webster, 6 valves



Fig. 3. Stevens Hotel, Oak Room, Chicago, Ill.
HOLABIRD & ROCHE, Chicago, Architects
Back-of-the-house departments and those directly serving guests have tube service to the management and the bookkeepers



Fig. 6. The Texas Co. in the Chrysler Building, New York

WILLIAM VAN ALEN, Architect

This Central Station links together, with 4x7-in. oval tube lines, the head offices of the Texas Co. spread over 13 floors; transmitting mail, telegrams and documents by shortest route at 30 ft. per second

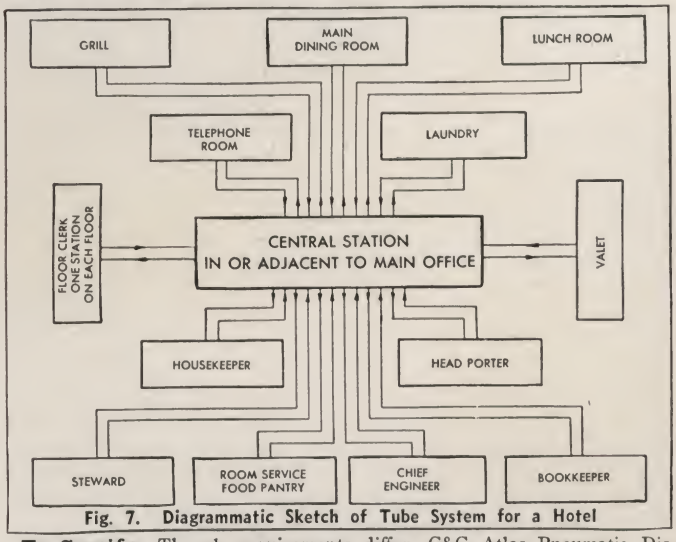


Fig. 7. Diagrammatic Sketch of Tube System for a Hotel

To Specify—Though requirements differ, G&G Atlas Pneumatic Dispatch Tubes can be made to fit every need. It is suggested that the architect or engineer consult us on proposed installations, so that we can work together towards a satisfactory solution of the problem. Send for Data Sheet showing inside measurements of standard carriers and space requirements for tube lines and schematic diagrams for small banks, hospitals, manufacturers and wholesalers, airports, and retail store tube room.

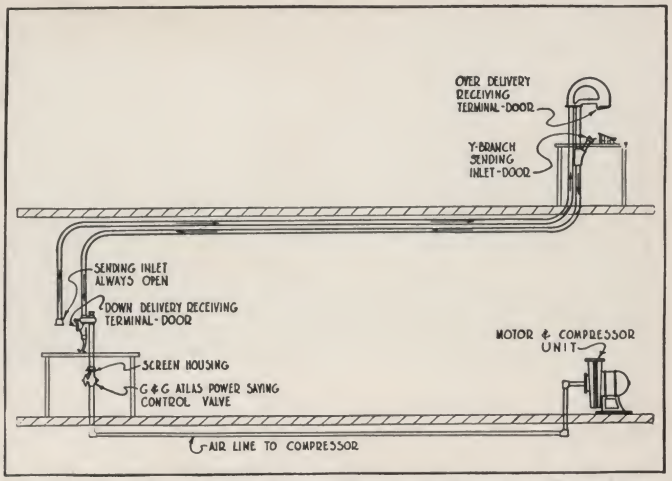


Fig. 9. One Twin Tube Vacuum Operated Pneumatic Tube Line

Showing elements which would be contained in a system of many lines. We will be glad to send diagrams showing application of G&G Atlas Tube Systems to various types of business



Fig. 10. The City Bank Farmers Trust Co., New York

CROSS & CROSS, Architects CLYDE R. PLACE, Engineer

Central Tube Station where 54 4x7-in. lines converge. Speeds transactions over many floors of this 71-story 935-ft. building, providing safe, confidential, quiet service and relieving elevator congestion

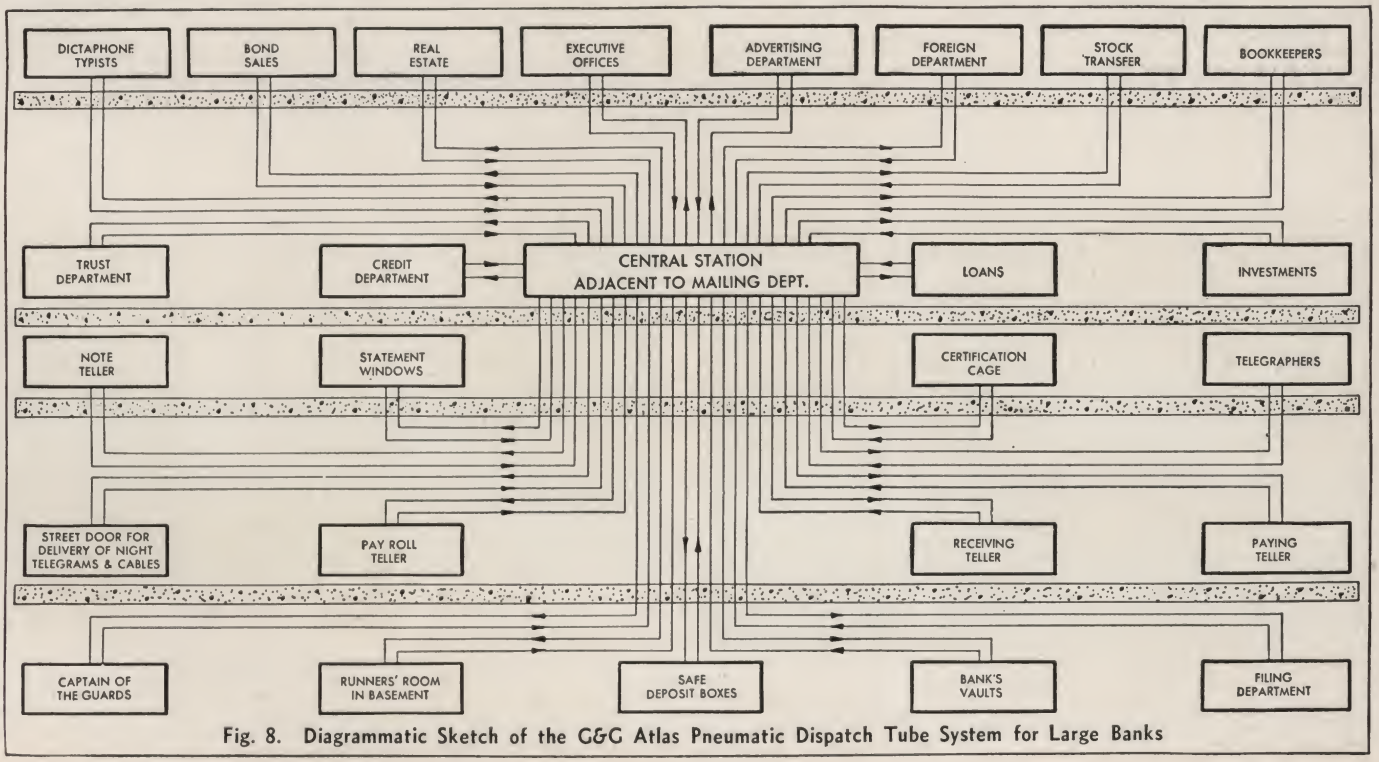
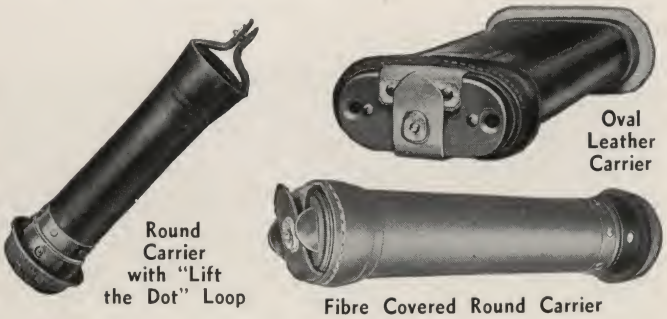


Fig. 8. Diagrammatic Sketch of the G&G Atlas Pneumatic Dispatch Tube System for Large Banks



Fig. 11. The Halle Bros. Co. (Department Store), Cleveland, Ohio
WALKER & WEEKS, Cleveland, Architects
C. A. WHEELER, Chicago, Fixture Architect
Tube room, Huron Prospect Addition. 78 lines (provision for 32 more), with G&G Atlas Power-Saving Control Valves, serve selling and non-selling departments. Grouped cashiers' desks with G&G Atlas Positive Consecutive Carrier Ejectors on the right



Preliminary Data

The preliminary data necessary to the study of a pneumatic tube installation is as follows:

(1) Plans showing the proposed location of stations and the motor and exhauster.

(2) Inside measurements of carriers required to contain the material to be transported. This will determine the size of the tubes; for example: 1¼, 1½, 2¼, 3, 4 and 5-in. round; 3x6 and 4x7-in. oval. Send for data sheet of standard carrier sizes.

(3) The length of carrier used will determine the radii of bends. Round carriers can be obtained from 3 1/16 to 12 in. long, and oval carriers can be had from 8½ to 14 in. inside length.

3x6 and 4x7-in. oval tubes are used in factories and other buildings where the article to be dispatched more conveniently fits this shape carrier. 3 or 4-in. round tubes are provided for handling larger quantities than are possible with 2¼-in. lines.

Round tubes, of 1¼-in. outside diameter, with 3¼-in. fibre carriers are used in banks for sending quotations and brief messages. 3x6-in. and 4x7-in. oval tubes with 13-in. leather carriers are generally used because it is preferred not to fold pass books, stock certificates, bonds, leases, etc.

Retail stores use 2¼-in. round tubes with 5-in. brass carriers between the sales counters and the tube room and the 3-in. lines with 10-in. leather carriers for non-selling departments.

The size of carriers must be determined as a preliminary, because it governs the diameter of the tube lines and the radii of the bends. Pneumatic tube lines are installed to handle carriers of a selected diameter and length. Other carriers of same diameter, but of shorter length, can also be used, but not longer carriers. The shorter carriers are much more desirable for small documents.

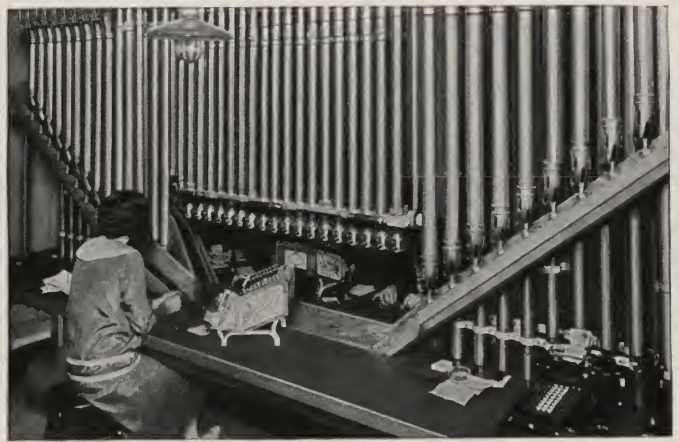


Fig. 12. Central Station for 39 2¼-in. Lines at Montgomery Ward & Co., Fort Worth, Tex.
Other G&G Atlas installations for this company are at Spokane, Wash., Dallas, Tex., Sioux City, Iowa, and Oklahoma City, Okla. 193 Atlas Power Control Valves used in these installations

Partial List of Installations

(Complete List on Request)

NAME OF JOB	LOCATION	ARCHITECT
Sears, Roebuck & Co.	Atlanta, Ga.	Martin C. Schwab
Johns Hopkins Hospital	Baltimore, Md.	James E. Sperry
S. S. Pierce Co. (Grocers)	Boston, Mass.	
Abraham & Straus	Brooklyn, N. Y.	Starrett & VanVleck
Brooklyn Edison Co.	Brooklyn, N. Y.	Company's Engineers
Oppenheim Collins & Co. (5)	Brooklyn, N. Y.	
N. Y. C. R. R. Passenger Dep.	Buffalo, N. Y.	Fellheimer & Wagner
Stevens Hotel	Chicago, Ill.	Holabird & Roche
Union Passenger Terminal	Cincinnati, Ohio	Fellheimer & Wagner
McKesson Crowdus Drug Co.	Dallas, Tex.	Whitson & Roberts
Montgomery Ward & Co.	Denver, Colo.	Company's Engineers
Parke-Davis Company	Detroit, Mich.	Smith, Hinchman & Grylls
American Tobacco Co.	Durham, N. C.	
Montgomery Ward & Co.	Fort Worth, Tex.	Company's Engineers
Conde Nast Publishing Co.	Greenwich, Conn.	
Franklin Simon & Co.	Greenwich, Conn.	Necarsulmer & Lehlbach
American Can Company	Jersey City, N. J.	
Public Service Corp. of N. J.	Jersey City, N. J.	
New York Telephone Co.	Kingston, N. Y.	
Braun Corp., Ltd.	Los Angeles, Calif.	Walker & Eisen
Northwestern Natl. Bank	Minneapolis, Minn.	Graham, Anderson, Probst & White
Mil. Co. Emergency Hospital	Milwaukee, Wis.	VanRyn & De Gelleke
Sun Life Assur. Co.	Montreal, Que.	Darling & Pearson
S. S. Kresge Dept. Store	Newark, N. J.	Starrett & VanVleck
Sterling Library at Yale	New Haven, Conn.	James Gamble Rogers
American Bank Note Co.	New York, N. Y.	
Bank of Manhattan Tr. Co.	New York, N. Y.	Morrell Smith Walker & Gillette E. F. Abell
Charles D. Barney & Co.	New York, N. Y.	Benj. Wistar Morris
Bellevue Hospital	New York, N. Y.	McKim, Mead & White
Bonwit Teller & Co.	New York, N. Y.	
Chase Nat. Bk. of the City of N. Y.	New York, N. Y.	Graham, Anderson, Probst & White
City Bank Farmers Tr. Co.	New York, N. Y.	Cross & Cross
Columbia Pres. Med. Center	New York, N. Y.	James Gamble Rogers
Consolidated Gas Co.	New York, N. Y.	Company's Engineers
John Davis & Co. (4 stores)	New York, N. Y.	
R. G. Dun & Co.	New York, N. Y.	
Chase Nat. Bk., Equitable Tr. Branch	New York, N. Y.	Trowbridge & Livingston
Hamburg-American Line	New York, N. Y.	Lansman & Smith
Knox Hat Company	New York, N. Y.	Mr. Nevins
R. H. Macy & Co.	New York, N. Y.	Robert D. Kohn
Metropolitan Life Ins. Co.	New York, N. Y.	Waid & Corbett
National City Building	New York, N. Y.	McKim, Mead & White
New York Hospital—Cornell Med. Center	New York, N. Y.	Coolidge, Shepley, Bulfinch & Abbott
New York Stock Exchange (Stock Clear. Corp.)	New York, N. Y.	Company's Engineers
Cities Service Bldg.	New York, N. Y.	Clinton, Russell, Holton & George
Rogers Peet & Co.	New York, N. Y.	
Stern Brothers	New York, N. Y.	
The Texas Co. (Chrysler Bldg.)	New York, N. Y.	Wm. Van Alen
Waldorf Astoria Hotel	New York, N. Y.	Schultze & Weaver
Montgomery Ward & Co.	Oklahoma City	Company's Engineers
Bonwit, Teller & Co.	Philadelphia, Pa.	Clarence E. Wunder
Fidelity Phila. Trust Co.	Philadelphia, Pa.	Simon & Simon
Strawbridge & Clothier	Philadelphia, Pa.	
W. J. Gilmore Drug Co.	Pittsburgh, Pa.	Joseph F. Kuntz
Rochester Times Union	Rochester, N. Y.	
Missouri Pacific R. R. Co.	St. Louis, Mo.	Company's Engineers
Montgomery Ward & Co.	Spokane, Wash.	Company's Engineers
Yale & Towne Mfg. Co.	Stamford, Conn.	
Mitsui & Co., Ltd.	Tokyo, Japan	Trowbridge & Livingston
Grasslands Hospital	Valhalla, N. Y.	Walker & Gillette
Library of Congress	Washington, D. C.	David Lynn
Potomac Elec. & Power Co.	Washington, D. C.	W. B. Wood
Woodward & Lothrop	Washington, D. C.	
State Mutual Life Assur. Co.	Worcester, Mass.	Parker, Thomas & Rice
Ward Melville Shoe Co.	Worcester, Mass.	George E. Strehan



Fig. 13. Columbia Presbyterian Medical Center, New York
JAMES GAMBLE ROGERS, Architect
In hospitals, a G&G Atlas Pneumatic Tube System will carry records, bills, reports, bandages and medicine (including liquids in bottles). A central station in or adjacent to Record Room can receive and dispatch carriers to and from In-Patients Nurses' Station on each floor; Out-Patients' Station in each clinic; Bookkeeper-Cashier; Superintendent; Laboratory; Dietitian; Admittance Office; Storekeeper, etc. A diagrammatic sketch showing a typical hospital installation will be sent on request

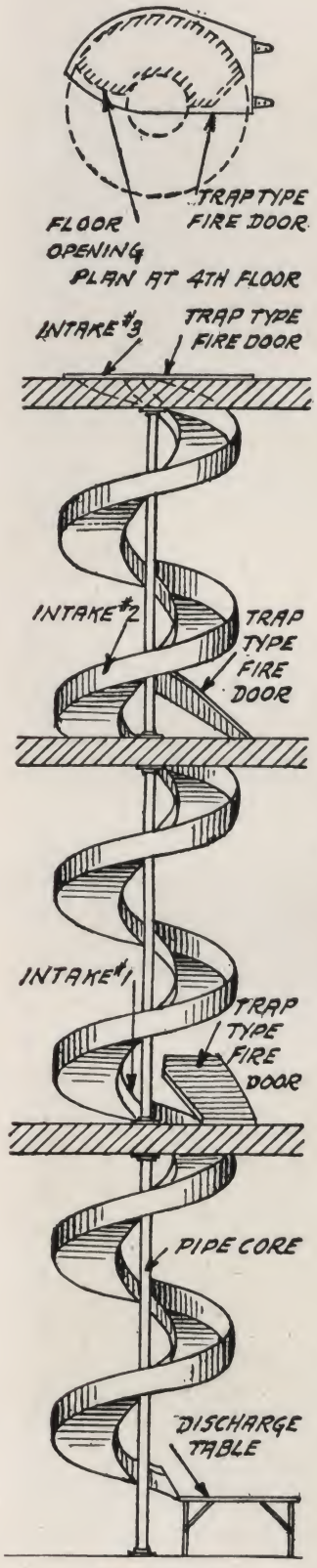
HASLETT CHUTE AND CONVEYOR CO.

GENERAL SALES OFFICE

Real Estate Trust Building, PHILADELPHIA, PA.

FACTORY: OAKS, PA.

For Haslett Fire Escapes, Laundry and Waste Chutes, see Manufacturers' Index



Haslett Spiral

Haslett Type Spiral Chutes

The Haslett type spiral chute has been developed to handle all classes of merchandise, but particularly the unusual class, such as barrels, wire strapped crates or boxes, baskets of glass products, very light or very heavy merchandise weighing up to two thousand pounds.

The structural framing is designed to carry the loads and relieve sheet metal sections from shock and stress. The sheet metal acts only as a guide to merchandise traveling in the trough and the structural frame transmits the load to the center column, which distributes the load to each floor.

The following tabulation lists standard dimensions and package sizes handled in the Haslett type spiral chute. Special sizes, diameters and pitch variations can be evolved by our Engineering Department upon application with full information.

Diam., ft.	Diam., in.	Trough width, in.	Pitch, ft.	Pitch, in.	Maximum package size, in. Length	Width	Height
3	0	12	3	3	15	9	6
4	0	19	4	4	22	14	12
6	0	24	6	6	30	18	16
7	0	30	7	6	36	23	20
9	0	36	9	6	48	28	26
9	10	42	10	6	52	32	28
12	0	48	13	0	60	36	30
15	0	60	16	0	72	46	40

Core Type Open and Housed Spiral Chutes

The core type spiral chute is built to handle the general run of wrapped merchandise, cartons and relatively light wooden boxes. It is especially adapted for handling packages from wrapping or shipping departments intended for parcel post, express or local delivery shipments. These chutes are adapted to multistoried industrial buildings where initial processes originate in the upper floors and work downward.

The housed class of the core type chute is usually provided for department stores and loft buildings where it is desirable that only authorized persons have access to the chute. It is adapted to the closed shaft where the only entrances are the intake and discharge doors set in the walls.

The following tabulation lists standard dimensions and package sizes handled in the core type spiral chute. Special sizes, diameters and pitch variations can be evolved by our Engineering Department upon application with full information.

Diam., ft.	Diam., in.	Trough width, in.	Pitch, ft.	Pitch, in.	Maximum package size, in. Length	Width	Height
2	4½	12	4	0	15	8	6
3	4½	18	5	6	*	*	*
3	10	18	7	0	22	12	9
5	0	24	9	0	30	15	12
6	0	31	11	0	36	20	15
7	0	36	12	6	45	24	16
8	0	42	14	6	50	25	16
10	0	48	18	0	60	32	23

*Anthracite up to 3 in. long (special chute).

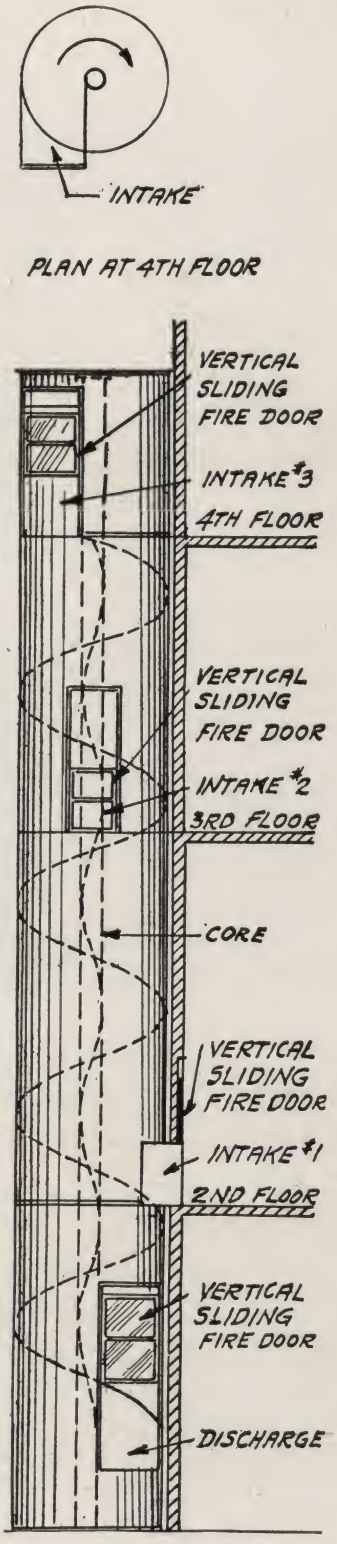
Gravity Roller Conveyor

The gravity roller conveyor is applicable in all types of industry. It can be bought in standard units and set up by the purchaser.

Send for detailed catalogue.

Belts and Vertical Conveyors

Belt conveyors and vertical conveyors fabricated for individual installations. Control and sorting details offer sound automatic service. Send requests for information to General Sales Office.



Housed Core Spiral

STANDARD CONVEYOR COMPANY

Manufacturers of Conveying Machinery and Equipment

NORTH ST. PAUL, MINN.

SALES AND SERVICE IN ALL PRINCIPAL CITIES

Products

GRAVITY—Roller Conveyors; Wheel Conveyors; Spiral Chutes; Straight Chutes.

POWER—Belt Conveyors; Slat Conveyors; Automatic Inclined and Straight Lift Elevators; Dish Tray Elevators; Trolley Conveyors; Booklifts.

PORTABLE—Tiering Machines; Piling Machines; Boat Loading and Unloading Equipment.

PNEUMATIC—Tube Systems.

FIRE ESCAPES—Spiral (open and closed).



Lowerlift
This dish tray handling machine carries clean dishes to dish and cutlery pantry

Every Standard Product Is Designed and Built to Fit the Individual Needs of the Industry It Serves

Gravity Roller Conveyors are the most economical of horizontal conveyors, and are therefore the most commonly used.

Single, Double, and Triple Runway Spiral Chutes lower merchandise between floors.

Power Belt and Slat Conveyors operate either horizontally or on an incline.

For elevating merchandise between floors, the Automatic Straight Lift and Inclined Elevators are generally recommended.

The Lowerlift handles dishes in restaurants, hospitals, hotels, or wherever it is necessary to handle food from floor to floor.

The Trolley Conveyor is designed for conditions requiring clear floor space and a continuous flow of materials.

The Booklift use is practically unlimited. It is especially adapted to the needs of libraries for books, insurance companies for policies, etc.

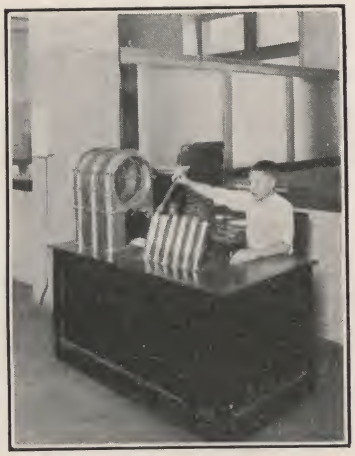
For elevating commodities from floor to ceiling, the portable Piling and Tiering Machines are best suited.

Standard Pneumatic Tube Systems have found a place in department stores, railroad and insurance offices, banks, newspaper plants, hotels, wholesale houses and other businesses.

Standard Spiral Fire Escapes either open or enclosed, are built for schools, hospitals, colleges, hotels, asylums, and theaters.

Service

For more than a quarter of a century, the STANDARD CONVEYOR COMPANY has been engaged in the designing and building of Conveyor Systems for all types of industry. This vast experience is reflected in improved design and an intimate knowledge of conveyor requirements. Experienced sales engineers who have made a life study of conveying problems are located in all principal cities to give prompt service. Catalogue "O" sent on request.



Pneumatic Tube Systems
Carries correspondence, orders, cash, and small articles through tubes between departments or offices

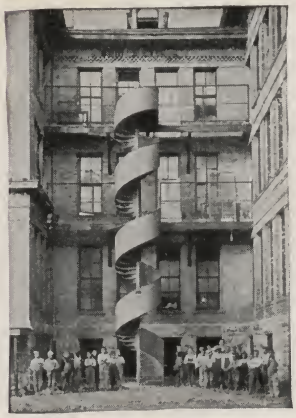


Spiral Chute and Roller Conveyor
Cartons of coffee being carried by gravity into spiral chute



Portable Piler and Sections
Sections of steel slat conveyor delivering sacks to piler

STANDARD CONVEYOR COMPANY



Spiral Fire Escape
Open type
Fastest and safest means of egress



Slat and Belt Conveyor
Designed for handling cartons of automobile repair parts



Tiering Machines
Portable elevator; either hand or electrically operated

ESTABLISHED 1867

THE LOUDEN MACHINERY COMPANY

Modern Barn Equipment and Ventilating Systems

170 Broadway, FAIRFIELD, IOWA

BRANCH OFFICES

ALBANY, N. Y., 1047-53 Broadway
CHICAGO, ILL., 565 W. Washington Boulevard
NEW YORK, N. Y., 5629-A Grand Central Terminal
PHILADELPHIA, PA., 1505 Race Street
ST. PAUL, MINN., 2282-88 University Avenue
TOLEDO, OHIO, 2294 Albion Street

IN CANADA: Beatty Bros., FERGUS, ONTARIO

Products

Complete EQUIPMENT for COW BARNS, HORSE BARNS and HOG HOUSES, including:

- Stalls and Stanchions
- Milking Parlor Stalls
- Steel Cow, Calf and Bull Pens
- Water Bowls
- Manger Divisions
- Manure Carriers
- Feed Carriers
- Feed Trucks
- Swinging Cranes
- Manger and Gutter Drains
- Cork Brick-Wood Block
- Horse Stable Equipment
- Hog House Equipment
- Roof Windows
- Cupolas
- Hay Unloading Tools
- Barn Door Hangers
- Garage Door Hangers

VENTILATING SYSTEMS:

For barns, hog and poultry houses, creameries, cheese factories, etc. Two types—gravity and electric. Fully described in new Ventilation Book.



Stall Section of Louden Equipped Dairy Barn. Masonic Home Farm, Charlton, Mass.



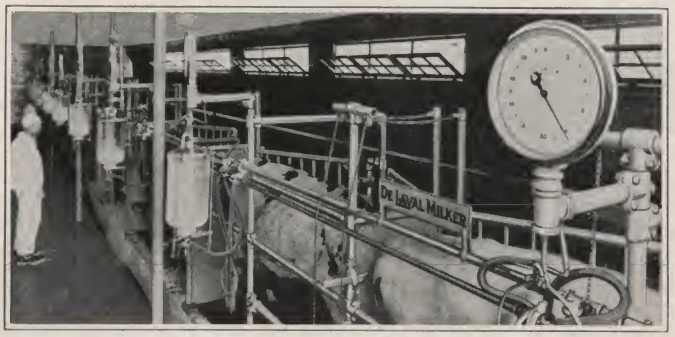
Louden Equipped Horse Stable of Mr. H. V. Foster, Bartlesville, Okla.

Service

Louden Field Engineers are at your call for consultation on arrangement, ventilation, or equipment. If desired, they can render immediate service by preparing suggestive plans.

Our Engineering Department will work in conjunction with architects, to any extent, or will assume entire responsibility for the preparation of complete plans and specifications.

Send for 192-page catalogue, giving specifications and full information on Louden equipment.



Louden Milking Parlor Stalls at Hampshire Hills Dairy of Whiting Milk Co., Wilton, N. H.



Louden Pens in Calf Barn at Eliada Home Farm, Asheville, N. C.



Sanitary Louden Equipped Hog House at the Allen County Farm, Ft. Wayne, Ind.

LANDSCAPE

◆ ◆ ◆

PAVING, CURBS AND GUTTERS

AMERICAN-MONINGER GREENHOUSE MFG. CORP.

Designers and Builders of Glass Enclosures of All Types

MAIN OFFICE: 1925 Flushing Avenue, BROOKLYN, N. Y.

AMITYVILLE, L. I., N. Y.
124 Ketcham Ave.

CHICAGO, ILL.
1313 W. Randolph St.

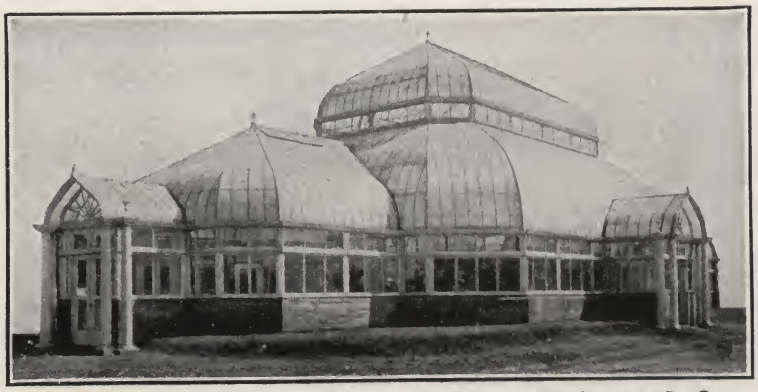
NEW ENGLAND OFFICE
Norton, Mass.

PHILADELPHIA OFFICE
West Chester, Pa., Box 398

Products

GREENHOUSES.
CONSERVATORIES.
PALM HOUSES.
SHOW HOUSES.
SOLARIUMS.
SWIMMING POOL and TENNIS COURT GLASS ENCLOSURES.

Whether your problem is a small sun parlor or an elaborate series of glass-covered gardens, we are in a position to give you every service from the designing to the finished building ready for occupancy.



Palm House Built for the U. S. Botanic Gardens, Washington, D. C.

We have standard designs of greenhouses to fit into any of your landscaping plans.

Besides being used for the growing of flowers, plants and fruits, American-Moninger Glass Enclosures are frequently built for covering gymnasiums, swimming pools, tennis courts, etc.

Sanitariums find glass houses a means of helping patients regain their health.

Many of these enclosures are erected for the Agricultural Departments for experimental work.

Architects can make good use of American-Moninger standard designs of glass enclosures in schools, colleges, universities, parks, public institutions, cemeteries and golf clubs.

Write for the American-Moninger Book of Conservatories, Palm Houses, Show Houses and Solariums.

Specifications for American-Moninger Glass Enclosures

Steel Work. American-Moninger Glass Enclosures are designed in accordance with the best engineering practice. Framework members, such as arches, trusses, columns, purlins, etc., are made from standard structural-steel shapes, and accurately fabricated as required. Shop riveting is done so far as is practical, the remainder of the framework being securely bolted. Sway bracing is provided as required to provide a staunch framework throughout. Steel sills, to cap 8-in. masonry walls, and ornamental gutters at the eave line or at the base of the curved portion of the roof, are made from $\frac{3}{16}$-in. steel plate, accurately bent to form and fabricated. These members are galvanized by the hot process after fabrication. All bolts and fittings used in connection with galvanized members are galvanized.

Wood Work. All the wood work is made from the finest grade of air-dried genuine Tidewater Gulf Red Cypress, free from sap streaks, knots or other defects and smoothly finished. All facias, mouldings, finials, etc., are furnished. For semi-curvilinear or curved-eave houses the bars are cut for a 24-in. radius from one-piece lumber—not steamed or bent.

Ventilating Apparatus. Encased gear type of ventilating machines, self-locking and self-oiling, are furnished with hand wheels conveniently located for access from walks or doors. Standard 1¼-in. wrought-steel pipe shafting securely connected with double pinned malleable couplings operate in hangers bolted to the supporting framework. Elbow type ventilator arms are furnished.

Heating. Either steam or hot water heat can be furnished but we recommend hot water heat for conservatories with separate boiler installation. For the radiation, 2-in. pipe is furnished beneath the benches, complete with all necessary fittings, valves, pipe carriers, supports, automatic air vent and connections to the boiler.

Plumbing. The watering system is so arranged as to accommodate 25-ft. hose lengths. All pipe and fittings are galvanized. The hose valves are ¾-in. brass.

Glazing. For all standard work the glass furnished is flat drawn, clear, double strength, of greenhouse quality. For sash single lights are furnished as required, and 16-in. x 24-in. glass is used for all other glazing. Where other thickness, size or quality is specified, such specifications will be complied with. Curved glass is furnished where required, and bent to proper radius according to the requirements. All glass is carefully bedded in an elastic glazing compound and secured with ¾-in. hot-process galvanized brads, which have proven to be the best for this purpose.



One of the Show Places in St. Louis, Mo.
Built for C. Thompson, Webster Groves, Mo.



Greenhouse Built for Illinois State Hospital for the Insane, Kankakee, Ill.

Painting. All wood work is painted at the factory with one coat of selected primer, the entire structure, except the galvanized parts, is painted with two additional coats of the best quality of greenhouse paint after erection, the final coat being applied after glazing.

Hardware. All sash are hung with three hot-galvanized butts, each with fast brass pins. The doors are furnished with brass butts with loose brass pins, bronze locks and knobs. Tumbler locks and knobs furnished for all outside doors. Bolts, screws and nails are all either hot-galvanized or cadmium plated.

Final. Complete masonry drawings are furnished. Sketches and estimates will be furnished free of charge and we will gladly co-operate with architects on the design of all types of glass enclosures.

DAYTON GREENHOUSES AND CONSERVATORIES

Manufactured by

THE DAYTON GREENHOUSE MFG. COMPANY

DAYTON, OHIO

Products

DAYTON CONSERVATORIES, SOLARIUMS, SWIMMING POOL ENCLOSURES, COMMERCIAL GREENHOUSES, SECTIONAL GREENHOUSES, and VENTILATING and HEATING EQUIPMENT for greenhouses.

Also Sludge Bed Covers, Boilers and Heating Equipment.

Skilled workmen erect complete projects.

For our page on Window Operators see Manufacturers' Index.



Dayton Conservatory with Palm House in Center and a Wing on Each Side

Details of Construction

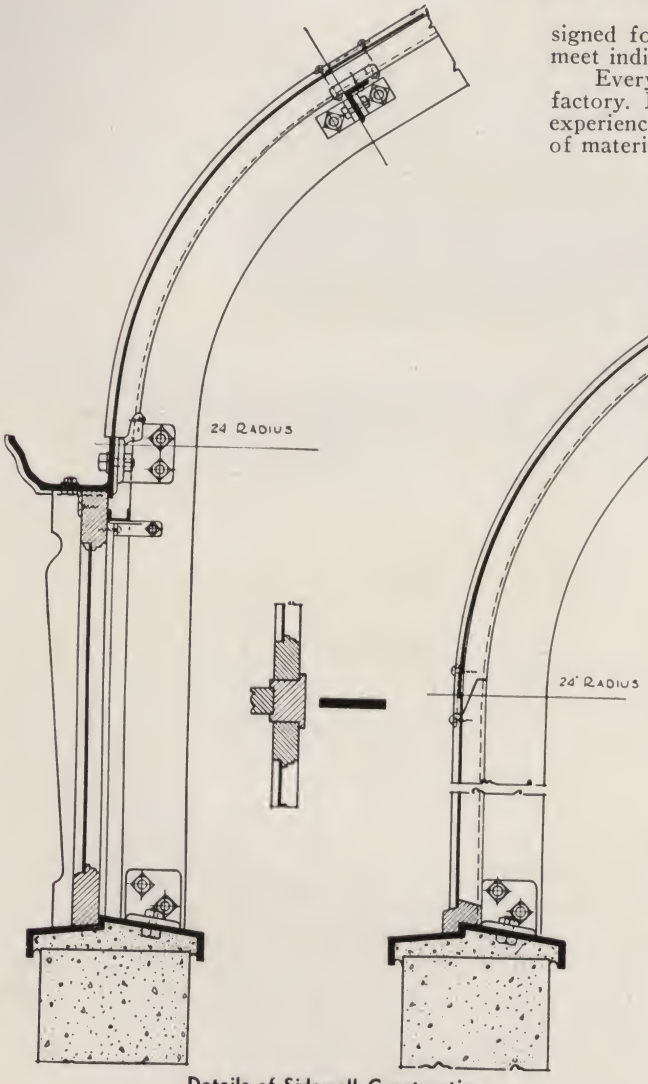
Dayton Conservatories are made in five standard widths, viz.: 11, 15, 18, 21 and 25 ft. Special widths can be furnished if necessary. The length should be governed by our standard sections which are 8 ft. 4¾ in. each, and should if possible be in multiples of this unit. The masonry walls are 8 in. thick at the sill and are usually 30 in. above floor line. The wall is capped with an everlasting cast iron sill neatly designed. All door openings in walls are 39½ in. wide.

All woodwork is milled of clear heart red tidewater cypress smoothly machined. Double strength greenhouse glass is used throughout. Ventilating machines are worm and gear type, designed for smooth and easy action. Complete heating systems furnished to meet individual requirements.

Every Dayton Conservatory when finished is and must be completely satisfactory. Dayton Conservatories are designed by greenhouse specialists of long experience. Every detail is finished with skilled perfection, and only the finest of materials are used. Dayton Conservatories are built to endure.

Engineering Service

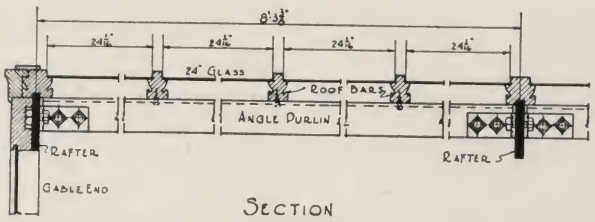
Our Service Department will be pleased to co-operate with architects and engineers. We can give every service from designing to erection of the finished structure. Detailed specifications and plans gladly furnished upon request. Write freely to our Service Department.



Details of Sidewall Construction



GABLE ELEVATION



SECTION

THE FOLEY GREENHOUSE MFG. CO.

GENERAL OFFICES AND FACTORY
7700 Jackson Boulevard, FOREST PARK, ILL.
(A Suburb of Chicago)

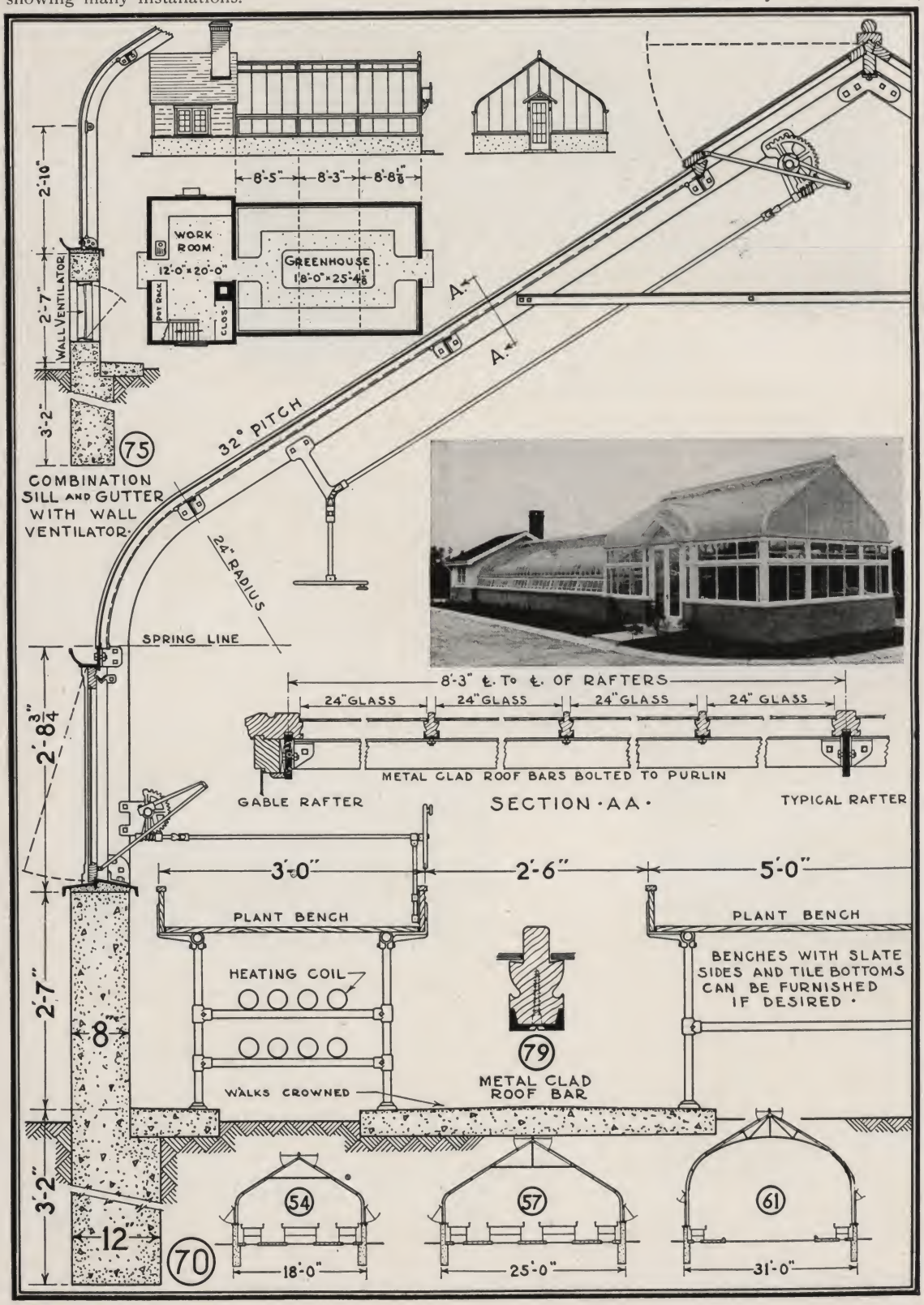
Products and Service

GREENHOUSES, CONSERVATORIES, GLASS ENCLOSURES for Swimming Pools, Sludge Beds, and Sprinkling Filters.

We submit suggestions, data, sketches, specifications, and estimates. With order, complete plans and details will be furnished. Send for 52-page book "THE GREENHOUSE BEAUTIFUL" showing many installations.

Design

We build three distinct types of construction: (*1*) Curved eave with ornamental gutter at spring line, ventilating sash hinged to gutter (Detail 70); (*2*) Straight eave with either ornamental gutter or angle iron eave plate; (*3*) Curved eave with clear, shadeless eave, combination sill and gutter with ventilators in masonry wall (Detail 75).



General Specifications: Cast iron sills or combination sills and gutters cap masonry wall. Steel rafters, 8 ft. 3 in. centers. Steel angle purlins connect to rafters and receive bolts (Section AA) which attach metal-clad roof bars (Detail 79).

Woodwork: Including ridge, cap, ventilating sash, metal clad roof bars, rafter caps, gable rafters, sash doors and hoods. Made of clear Redwood and/or Gulf Red Cypress.

Ventilating Apparatus: For operating roof and side ventilators.

Paint: Sufficient for three coats on entire superstructure.

Bench and Plant Tables: Galvanized metal frame with round corner plates, cypress sides and bottoms or tile bottoms, slate sides.

Hardware: Galvanized hinges for vents and doors, bronze locks, copper nails, brass screws, galvanized bolts.

Glass and Glazing: Double strength glass, 24 ins. wide, bedded in special greenhouse putty, secured with copper or zinc nails.

Heating and Watering System: Gravity hot water heat (steam if more advantageous). Radiation arranged in 2 in. pipe coils under benches, connected to Foley Cast Iron Sectional Boiler. One hose-bib in each walk of each compartment, provided for watering.

HITCHINGS & COMPANY

ESTABLISHED 1844

Manufacturers and Erectors of Improved Iron Frame Greenhouses and Greenhouse Heating Systems

GENERAL OFFICES AND FACTORY

ELIZABETH, N. J.

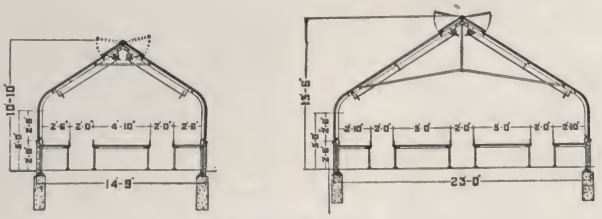
NEW YORK, N. Y., PHILADELPHIA, PA., BOSTON, MASS.

Products

IMPROVED IRON FRAME CURVED EAVE GREENHOUSES and CONSERVATORIES.
SUPER-FRAME STRAIGHT EAVE GREENHOUSES without interior columns.

Also Greenhouse Boilers and Heating Systems, Sash Operating Apparatus, Greenhouse Equipment.
Sludge Bed and Spray House Covers.
Swimming Pools and Swimming Pool Covers.

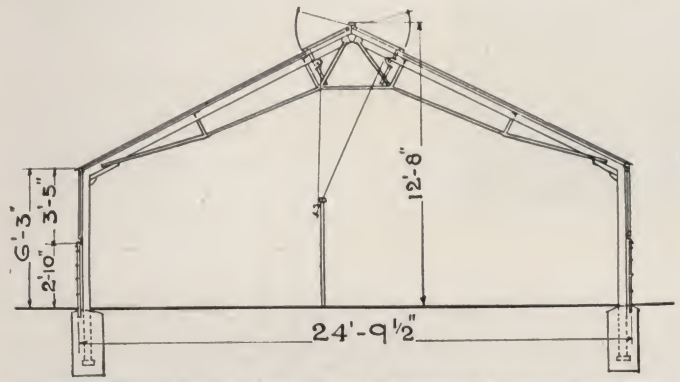
Curved Eave Iron Frame Greenhouses



Typical Section

Gutters and side ventilation optional.
Pier foundations and curtain walls, or continuous foundations and wall optional.
Glass spacing: 24 ins.
Roof pitch: 7½ ins.
Standard widths: 10 ft., 14 ft. 9 in., 18 ft., 23 ft., and 25 ft.
Length of standard bay: 8 ft. 2⅞ ins.

SUPER-FRAME Greenhouses Without Columns

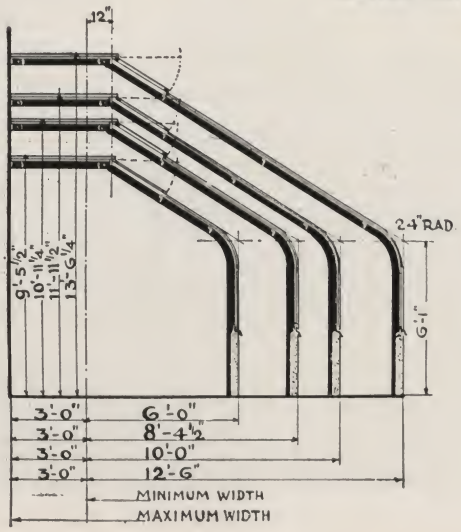


Cross Section of Typical Super-frame Greenhouse without Columns—In Widths Up to and Including 51 Ft. 6 In.

HITCHINGS
SUPER-FRAME
GREENHOUSE
By Practical Engineers

Available when a straight eave greenhouse is preferred.
Standard widths: 11 ft., 14 ft. 5 ins., 17 ft. 11 ins., 21 ft. 4 ins., 24 ft. 9½ ins., 28 ft. 3 ins., 31 ft. 9 ins., 35 ft. 2 ins., and others up to 85 ft. Length of standard bay 12 ft. 1¼ ins.
Eliminates shade-casting structural members and columns. Welding and galvanizing make side construction thoroughly rustproofed. Joints are welded at our factory wherever possible. Height of sides, 6¼ or 7½ ft., optional. Roof pitch: 6 ins.
Glass spacing: 20 ins. Lower initial cost and lower upkeep.

Curved Eave Leanto Greenhouses with Deck



Built like our full span curved eave greenhouses, but with a roof deck that may be varied in width to meet conditions where leanto connects to other building. Deck also gives protection against falling icicles in winter. Its use avoids excessive height, yet it casts no shade over plants.
Standard sizes with minimum to maximum widths are shown on drawing.
Roof pitch: 7½ ins.

Planning and Estimating Service

All Hitchings' offices are equipped to render individual service in the planning and erecting of greenhouses for your clients. They will gladly provide you with all desired information, directly applicable to the particular requirements. *Individual service by our men* makes your planning *individual* and permits quicker and more definite results with every assurance of a pleased client.

LORD AND BURNHAM COMPANY

Designers, Manufacturers and Builders of Greenhouses for Four Generations

FACTORIES

IRVINGTON, N. Y. — DES PLAINES, ILL. — ST. CATHARINES, ONT.

SALES OFFICES

BOSTON, MASS.
CHICAGO, ILL.
CLEVELAND, OHIO
IRVINGTON, N. Y.
NEW YORK, N. Y.
PHILADELPHIA, PA.
ST. CATHARINES, ONT.
TORONTO, ONT.

For our page on Sash Operators, see Manufacturers' Index

Products

1—GREENHOUSES: Three distinct constructions.
2—CONSERVATORIES: Standard and special constructions.
3—SOLARIUMS and VITALARIUMS for Sunsoaking.
4—SWIMMING POOL ENCLOSURES or GLASS-OVERS.
5—DRIP-FREE TENNIS COURT SKYLIGHTS.
6—SLUDGE BED GLASS-OVERS.
7—SPECIALIZED HEATING SYSTEMS for all above enclosures.
8—SASH OPERATING APPARATUS of highest type for banks, churches, schools, public buildings.
9—SUPPLIES and EQUIPMENTS, such as:
(a) Ventilation apparatus—both hand and automatic.
(b) Heating boilers, both cast iron and steel tubular.
(c) Plant benches and tables of various types.
(d) Wiring frames.
(e) Hot bed and cold frame sash and frames.
(f) Special greenhouse paint and putty, etc.



Hexagon Conservatory Erected for H. L. Judd, Berlin, Conn.

The construction is a drip-free one, making it practical as a gathering place for tea, cards or lounging

The Company Itself

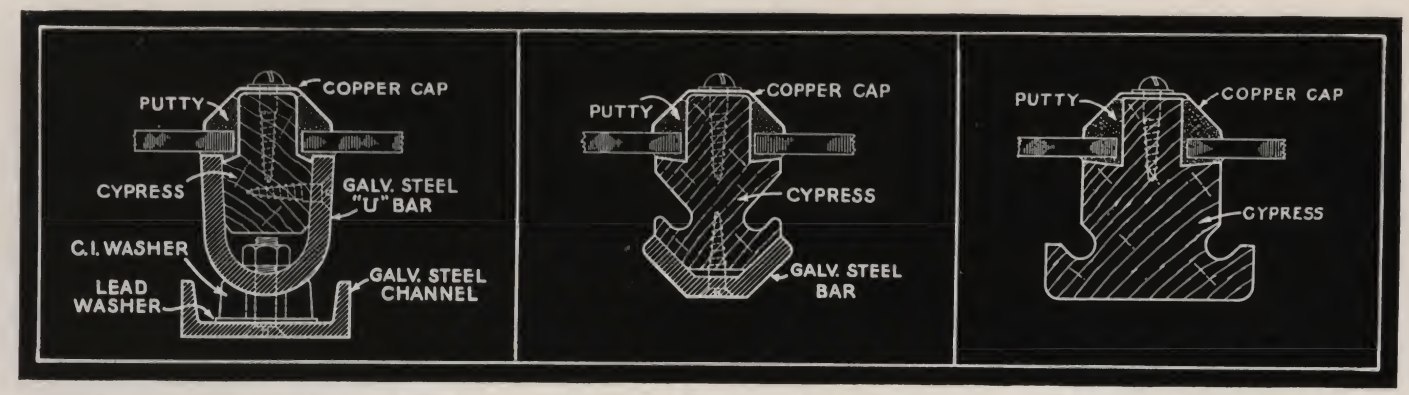
Oldest in the business. One of the largest builders of both private and commercial structures of glass. For over four generations specialists in structures of glass. Only concern having Eastern, Western and Canadian factories. Branch offices manned with trained greenhouse specialists insure prompt personal service. All materials are manufactured and fabricated in our own factories, with but few minor exceptions, such as certain hardware and the glass. Nothing "farmed out." A constant high quality and constant control can thus be maintained on every job. Extensive stock of glass kept on hand. Prompt shipments can at all times be made.

Division of Work

The entire work will be handled by us in one blanket contract, or in part as desired. We furnish without charge masonry plans, showing foundations, walks, trenches, etc. Necessary alterations are indicated when such are to be made to an existing structure.



Ornamental Portion of a Greenhouse Group of 8 Houses Erected for Warren Wright at Golf, Ill.



Type No. I. U-Bar Is Equipped with a Channel Drip Gutter

Type No. II. Improved Master V-Bar, with Copper Cap

Type No. III. All Cypress Bar with Copper Cap



Improved Master V-Bar for Greenhouses

The Three Cuts Above Show Glazing Details Used in Conservatory Constructions

TYPES OF CONSTRUCTION

There are four types of Lord and Burnham constructions to meet the requirements of greenhouses, conservatories, sunning rooms, swimming pools and other glass-overs. Each type is covered on this page.



Method Used in Fastening Improved V-Bar to Gutter Showing Nicety of Refinement

Improved Master V-Bar

For section details see page 4. The finest of the steel frame constructions. Its outstanding feature is the V-shaped galvanized steel roof bar with its cypress glazing core. Unlike other bars of similar shape, condensation moisture is so taken care of, that it cannot get between wood and metal, inviting decay. The cypress core is held firmly in place so that it contacts with the metal equally at every point, by screws through the bottom, instead of on alternate sides. The flat bottom of the Master V-bar forms a basically sound structural seat requiring no fittings to hold the bars to the purlins. Every detail of the construction, in its proportions and painstaking design, reflect the refinements and perfections you seek in a structure developed by a concern of Lord and Burnham's reputation. So light and airy is the structure, that when inside you have all the feeling of being outside.

It is made with either continuous side ventilation or panels in the wall.

Standard Steel Frame Type

This is the old standby construction for all around purposes. The frame is of steel, with all cypress glazing bars. Somewhat lower in cost than the Improved Master V-bar construction. Has given generations of satisfactory service. It is made with a curved eave, having a gutter at the bottom of the radius, or with a straight eave with gutter at the eave angle. One of the advantages of the Curved Eave over the Straight Eave is that it gives an increased height of side for headroom or for growing the taller plants. We will gladly send Service Sheet No. 1, giving full specifications and details.

Practical Purpose Construction

A house stripped for the running. No attempts at the ornamental. Just a thoroughly practical, good looking house for those seeking the greatest producing space per square foot covered, per dollar expended. Used frequently in connection with farm group locations. Construction is practically the same as used by the commercial grower of cut flowers for market. Has a straight angle galvanized iron eave.

For illustration of house, see page 3.

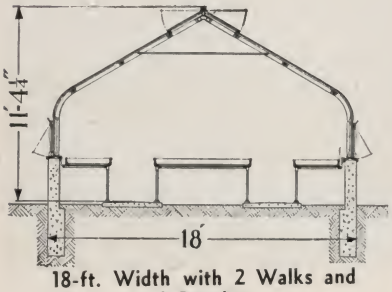
Conservatory Constructions

Types Nos. 1, 2, and 3, shown at top of this page, are used for conservatories, solariums, vitalariums or glassed-over pools. Where the glass enclosure is to be used as a place to lounge or entertain and not primarily for growing plants, a special conservatory construction is desirable.

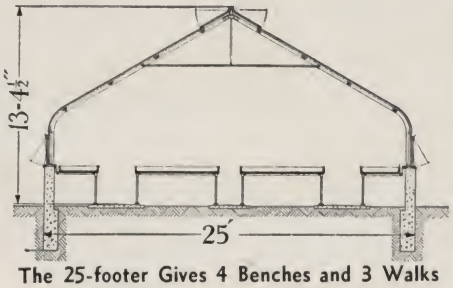
Drip-free Tennis Court Skylights

By the use of glazing and structural designs similar to our conservatory constructions, we have developed a drip-free detail which is unsurpassed for the glazing of skylights used in tennis court enclosures and other buildings of like requirements.

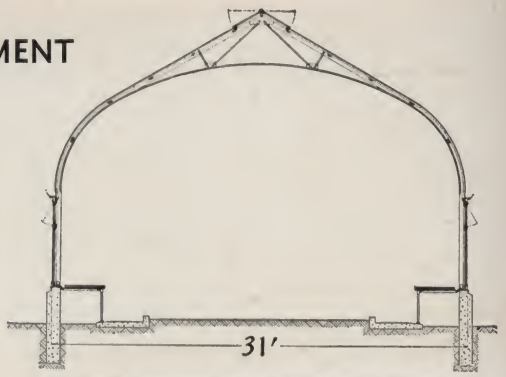
GENERAL DETAILS OF CONSTRUCTION AND EQUIPMENT



18-ft. Width with 2 Walks and 3 Benches



The 25-footer Gives 4 Benches and 3 Walks



31-ft. Palmhouse Having Sides with Transom Ventilation

Greenhouse Widths

There are three widths which experience has demonstrated to be the most satisfactory for the average single or group of houses on private places. They are 18, 25 and 31 ft. These widths give an economical arrangement of the benches and walks. Any width less than 18 ft., in other than leantos, costs out of proportion to the growing space secured.

Ultra Violet Transmitting Glass

This glass costs more than the other, and is worth it for solariums and the sun-soaking lounge portions of swimming pools. We call such ultra violet glass glazed structures "Vitalariums."

Ventilation—Hand and Automatic

Unless otherwise specified, all greenhouses are equipped with a row of continuous ventilating sash on each side of the ridge and hinged to it. Also along the sides and hinged to the gutter or eave plate. These are manually or electrically operated. Panel ventilation when desired can be furnished for the walls in place of the continuous sash hinged to the gutter. Conservatories, swimming pools, solariums, vitalariums, etc., have suitable ventilation to meet their individual requirements, as indicated by design, location and purpose.

Automatic ventilation furnished when desired. The simpler such devices are, the better. We have found the fan type with thermostatically governed louvers to be the most satisfactory. At automatically controlled intervals, the old air is drawn out and replaced by new. The needs of the case, and not the direction of the wind, operate it. In a simple, practically foolproof way, it insures just the right amount of ventilation, and a total freedom from drafts.

Heating—Automatic and Otherwise

(A) Greenhouses and Conservatories—We are specialists in heating glass enclosures. The heating of greenhouses and conservatories requires expert knowledge based on a long experience in meeting the exacting demands of plant life. With humans, variation of temperature causes only discomfort. With plants, it means serious setbacks or total loss. The individual growing temperature requirements of different plants must be known and unfailingly provided for. The rapid fluctuation of temperatures caused by the variation in the sun's radiation, must be reckoned with, else the plants seriously suffer. The entire heating system must also be considered in relation to the ventilation. If the heating be automatic, then hand operation must also be feasible in case of emergencies.

(B) Solariums and Vitalariums—Not only must a dependable, flexible heat be provided, but often humidification and air conditioning as well. Such again is a task for experts only.

(C) Swimming Pools—Two requirements must be met. That of keeping the water in the pool the right temperature; and the warming of the air itself for the comfort of users and the insuring of right conditions for the thriving of plants, so often a combination of the better planned pools. The filtration and purification of the pool water should also be provided for.

(D) Hot Water vs. Steam—For the average size house or group of greenhouses, hot water heat is the most satisfactory because of its steadiness and less intensity. On the larger groups or where heated from a central heating plant, steam is generally used. For conservatories, vitalariums, pools, etc., the conditions dictate the system.

(E) Automatic Heat—Where oil or gas fired boilers are used a thoroughly satisfactory control can be assured by the Lord & Burnham Thermostatic System. With less flexible fuels the results are proportionately satisfactory. To insure individual temperatures in each compartment, we connect the supply pipes with motor valves automatically operated. These valves are so designed that they can also be operated by hand.

(F) Unit Systems of Heat—In conservatories, sun rooms and the like, where the presence of the usual heating coils or radiators may be objectionable, we install the Unit System, consisting of fan equipped radiators. In all of this our engineers are specialized.

Paint

Have it any color outside or in, that you wish. The lighter it is inside, the greater the reflection and consequent growing advantage for the plants. For general uses our specially prepared aluminum paint is highly satisfactory. Unless otherwise specified it will be used both inside and out on all our glass structures.

All cypress is primed with aluminum before leaving the factory. If the final coat is to be the same, but one additional coat is necessary on the job. With the usual paints whatever the color, two additional coats are essential. If aluminum is used for the final coat, it forms an admirable base for any future paintings.

Screens and Slats

A method of screening has been worked out for conservatories, so that ventilation can be secured without interference. For shading the roof from the sun's glare during the summer months we furnish a special slat shading, which can be rolled up and down. For illustration, see Page 6.



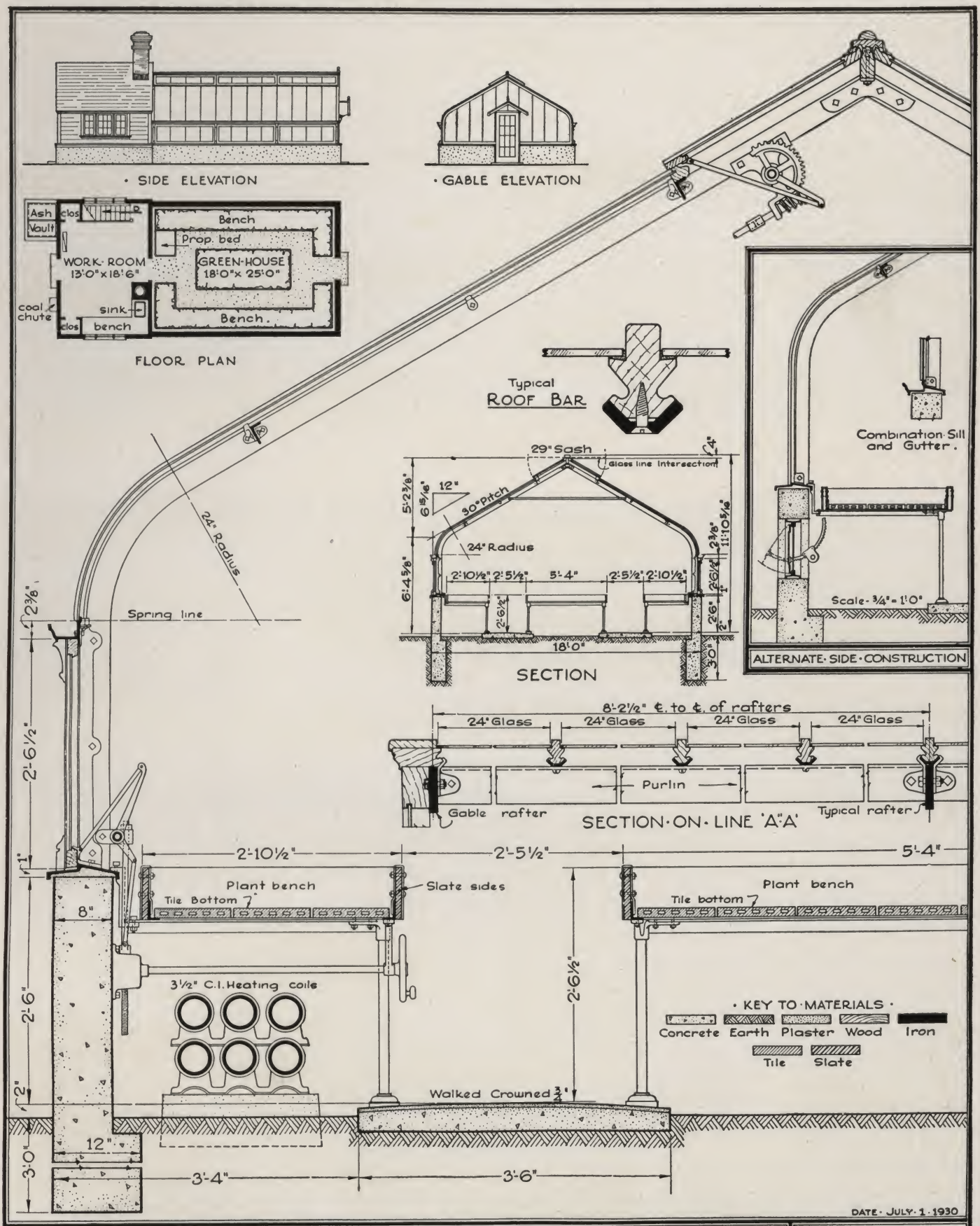
Curved Eave Leanto Adjoining Garage
The boiler for one heats the other at but little additional fuel cost



Practical Purpose House
Note eaves are straight instead of curved. Although stripped for the running to meet pocketbook requirements, it is enduring and attractive



The Curved Eave
Unfailingly attractive, can be built with or without an eave gutter



STANDARD-GREENHOUSE
IMPROVED
MASTER V-BAR

LORD AND BURNHAM COMPANY
BUILDERS OF GREENHOUSES & CONSERVATORIES

• SERVICE SHEET •
№ 6.
DETAIL-SCALES 1½"-3"=1'0"

SPECIFICATIONS FOR SECTIONAL IRON FRAME GREENHOUSE WITH IMPROVED MASTER V-BAR CONSTRUCTION

(Over forty years ago this company introduced a metal clad bar. Metal clad, or composite bars, of various forms and shapes have since been adopted by others.)

Iron Frame—***Sills***—The 8-in. foundation walls are to be capped with heavy cast iron sills 10 in. wide. Special fittings and stop ends are to be provided at all corners and intersections.

Gutters—Attractively moulded cast iron gutters, to be placed along each side of the greenhouse at the eaves line. Ornamental splice plates, together with cast returned ends and suitable outlets, are to be provided for each run of gutter. (*Alternate*—If wall vents are to be used, cast iron gutter at the eave line is omitted. If desired a combination sill and gutter can be furnished.)

Rafters—Steel rafters, bolted to sills, spaced on 8 ft. 2½-in. centers, bent to the correct radius at the eave line, are to extend in one piece from sill to ridge where they are to be secured together by specially designed fittings, which also serve to support the ridge.

Purlins—Steel angle purlins are to be placed in the roof to support the glazing bars. These purlins are to be secured to the rafters by specially designed lugs providing a two-bolt connection to the rafters.

Ties—Double steel angle ties are to be provided extending between the rafters and bolted to them.

Sash Stops—Galvanized iron sash stops are to be placed on each side of the rafters, being secured to the sills and gutters by certified malleable iron fittings.

Woodwork—All wood to be clear, air dried red gulf cypress of tank grade, free from sap and other imperfections. All mouldings, fascias, pilasters, finials, etc., are to be provided to complete the structure.

A ridge is to be securely bolted to the iron rafter brackets. This ridge is to be provided with ridge cap and to be moulded to receive the ventilating sash.

Glazing Bars—The glazing bars for roof, sides, gables and partitions, to be special Metal Clad Bars, these bars to consist of special steel shapes galvanized after fabricating, and to be provided with improved cores of air dried cypress. Condensation grooves to be entirely contained within the wood core so as to prevent water from seeping in between the bars and the cores. These cores are to be securely fastened to the steel angles with brass screws. All bars to be furnished in one piece and bent at the eave to receive glass of 24-in. radius.

Sash and Doors—The greenhouse is to be provided with ventilating sash on each side of the roof and on each vertical side, arranged to open out and to be continuous for each run of ventilation. (*Alternate*—If wall ventilation is desired, omit side ventilation.)

Glazed doors, of the design shown, are to be furnished for the door openings in the gable and partition.

All sash and doors are to be blind mortised and tenoned together and all joints thoroughly white leaded before assembly.

Hood—An ornamental glazed hood, supported by brackets, is to be furnished and placed over outside door.

Gables and Partitions—A complete glass gable and partition is to be constructed, where indicated on plan, in a manner similar to the roof.

Ventilation—The ventilating sash in the roof and sides are to be operated by L & B arm and rod, screw and thread type ventilating apparatus, which is self-locking at any point with controls conveniently located. (*Alternate*—If wall vents are desired. Cast iron wall panel vents 16x24 in., complete with cast iron frames and galvanized screens are to be furnished and placed in the center of each bay on each side of the house. These vents to be furnished by the greenhouse contractor, and built into the masonry wall by the mason contractor.)

Plant Beds—Plant beds are to be placed in the greenhouse, arranged as shown on plan, constructed of galvanized steel frames, and to have all corners rounded by the use of cast iron fittings. Plant beds are to be furnished with porous tile bottoms, and are to have planed slate sides. (*Alternate*—Plant beds are to be furnished with cypress sides and removable cypress bottoms.

A propagating bed is to be placed where indicated on plan, furnished with apron, additional heat and covered with glazed sash.

Hardware—All ventilating sash are to be hung with heavy wrought steel, hot galvanized butts having brass pins.

Doors are to be hung with solid bronze butts and lock sets, exterior doors to be fitted with mortised cylinder locks.

Galvanizing—All metal work used in the house is to be galvanized by the hot dipped process after fabrication, with the exception of malleable castings, cast iron gutters and sills.

Painting—All materials, not galvanized, to be given one coat of specially prepared greenhouse paint, of our own manufacture, before shipment. The interior of the structure to be finished with Lord and Burnham Special Aluminum Paint, Formula No. 47.

Note: Lord and Burnham Aluminum Paint, Formula No. 47, is an aluminum paint made especially for greenhouse work. It is the result of exhaustive experimentation on the part of this Company in conjunction with the Aluminum Company of America, and is the only formula designed solely for greenhouse work.)

The exterior of the structure to have two coats of Lord and Burnham Special Greenhouse Paint during erection.

The pipe legs and exposed frame work of plant beds to be given two coats of Aluminum paint after erection and the slate sides oiled. (*Alternate*—If cypress sides are used—The outer face of the sides of the plant beds are to be given two coats of paint after erection.)

All heating pipes exposed to view are to be given one coat of lamp black in oil.

Heating—A complete gravity hot water heating system is to be installed, and is to consist of 3½-in. cast iron pipe arranged in coils under the plant beds to maintain the following temperatures at zero:

(Specify temperatures. Varying according to growing requirements.)

The system is to be furnished with all necessary fittings, valves, automatic air headers, expansion tank, cast iron pipe chairs, etc.

The system is to be connected by mains of proper size to a Burnham Hot Water Boiler which is to be placed in the boiler cellar where indicated on plan.

The boiler is to be covered with asbestos cement and connected to the chimney by a galvanized iron smoke pipe (unless the contract is for material only, in which case the smoke pipe is to be furnished by the owner.)

Plumbing—A system of plumbing is to be placed in the greenhouse to furnish cold water through galvanized pipe. Brass hose bibbs are to be so located that a 25-ft. length of hose may be utilized. An additional hose bibb is to be placed in the boiler cellar.

Metal Work—Horsehead zinc or copper leaders are to be furnished to connect the outlets of gutters with the uprights of drains.

Final—Plans are to be furnished for all masonry required in connection with the greenhouse by the greenhouse builder.

These specifications are of a general nature, and all details must be executed to the architect's entire satisfaction.

MASONRY—POTTING HOUSE, ETC.

Foundations—Greenhouses require a foundation of stone, brick or concrete extending 2 ft. 6 in. above the walk level of greenhouse; below grade the walls should extend below frost level. Tops of all walls should finish with a plinth course 8 in. wide on which cast iron sills can be set.

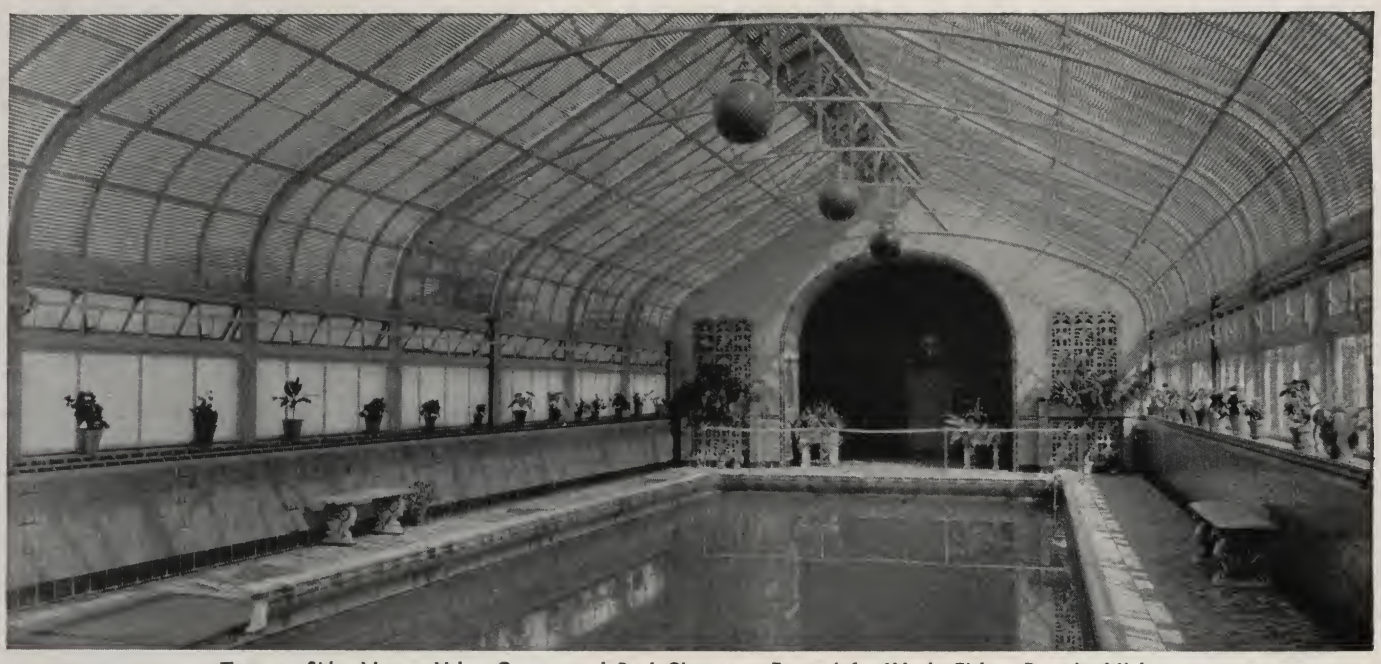
Walks—It is customary to construct concrete, tile or brick walks between the plant benches extending 6 in. under the beds to support uprights of plant benches. Walks should have a crown of ½ in. to drain water from sprinkling.

Potting House—A suitable building in which the plants can be potted should be attached to the greenhouse. This building can be of masonry or wood designed to harmonize with surrounding buildings.

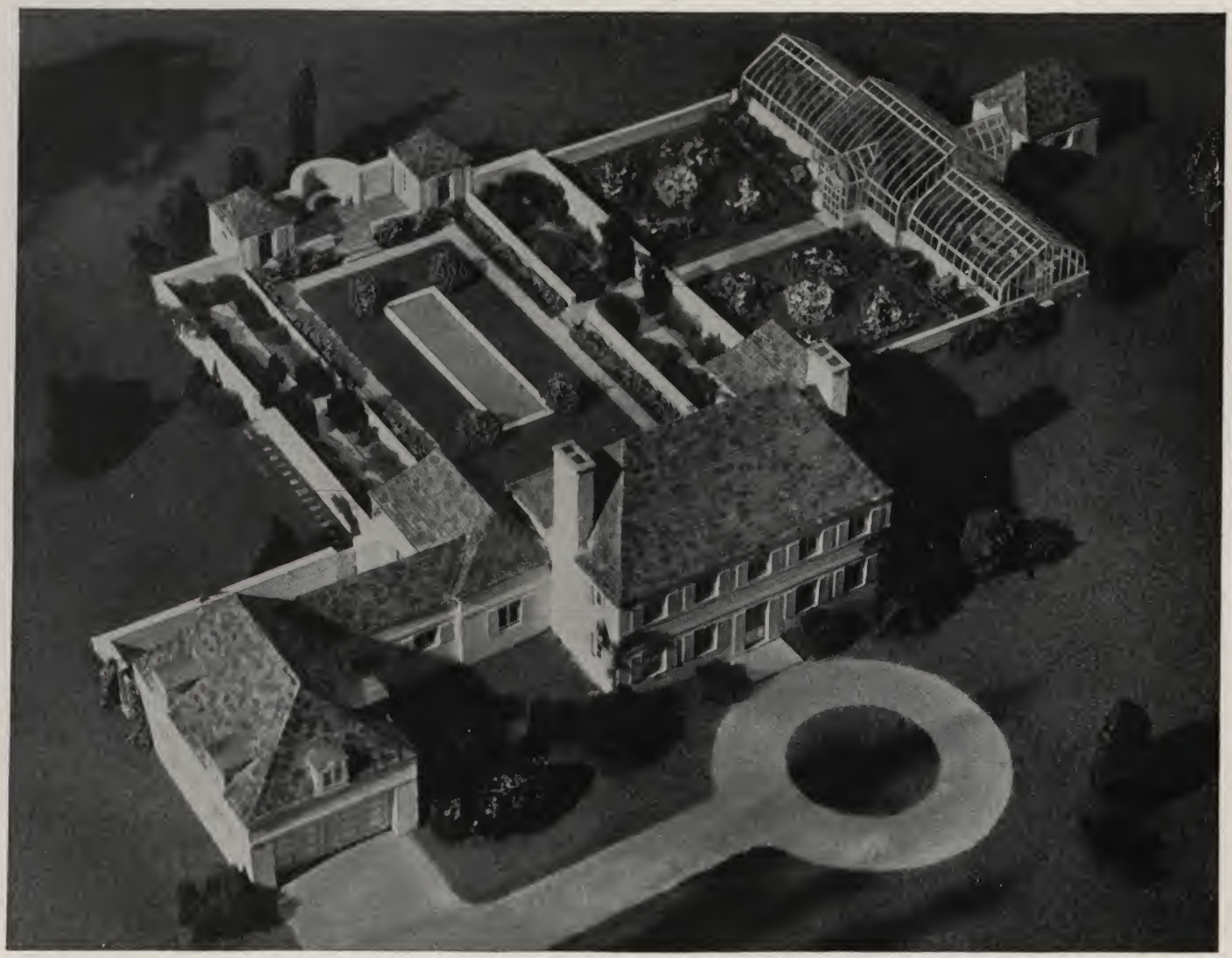
A cellar with floor at least 7 ft. 6 in. below walk level in the greenhouse is necessary and can be built under Potting Room.

A potting bench, sink, and seed closet are necessary fixtures for the workroom.

A chimney containing tile flue of correct size, to which the boiler can be attached, should be provided.



Transom Side, Master V-bar Constructed Pool Glass-over Erected for W. A. Fisher, Detroit, Mich.
RICHARD H. MARR, Architect
Ample side ventilation and double vents at the ridge give a free circulation of air for summer use.
The slat shading shown is to soften glare of the summer sun



Greenhouse Group of Plant House and Wings Connecting Workroom with Glass Passages
The pleasing balance and all around practicalness of this layout has caused its extensive use
Design of complete subject made by FRANCIS KEALLY



Harold Block's Penthouse Conservatory-living Room Located at East 57th Street, New York, N. Y.



Interior of Block Conservatory Shows Grace and Attractiveness of the Master V-bar Construction



Vitalarium or Sunning Room on Roof of New York Athletic Club. The Roof Glass Is Ultra Violet Ray Transmitting

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Bauhan, Rolf W., Princeton, N. J.
Baum, Dwight James, New York, N. Y.
Beatty & Beatty, L. A., New York, N. Y.
Bennett, Parsons & Frost, Chicago, Ill.
Bullard, Roger H., New York, N. Y.
Burnham Bros., Chicago, Ill.
Clark, Agnes Selkirk, L. A., New York, N. Y.
Clinton & Russell, New York, N. Y.
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Frost, Frederick G., New York, N. Y.
Fowler, Clarence, L. A., New York, N. Y.
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Ittner, Wm. B., St. Louis, Mo.
Jacobs, Harry Allen, New York, N. Y.
Keefe, Chas. S., New York, N. Y.
Klauder, Charles Z., Philadelphia, Pa.
Lamb, Thos. W., New York, N. Y.
Leavitt, Chas. W., & Son, L. A., New York, N. Y.
Little & Russell, Boston, Mass.
Marshall, Benj. H., Wilmette, Ill.
Mayer, Murray & Phillips, New York, N. Y.
Mueller, Paul D., L. A., Minneapolis, Minn.
McKim, Mead & White, New York, N. Y.
Nelson, Swain & Sons Co., L. A., Glenview, Ill.
Olmstead Bros., L. A., Boston, Mass.
Peabody, Wilson & Brown, New York, N. Y.
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Pentecost, Geo. F., L. A., New York, N. Y.
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Rogers, James Gamble, New York, N. Y.
Schultze & Weaver, New York, N. Y.
Shipman, Ellen, L. A., New York, N. Y.
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Tooker & Marsh, New York, N. Y.
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THE WILLIAM H. LUTTON COMPANY, INC.

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Also Solar Slat Shades.

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V-BAR GREENHOUSES
TRADE-MARK

Features of Lutton Solar V-Bar Construction

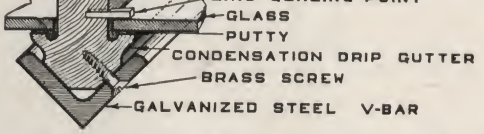
For over 30 years THE WILLIAM H. LUTTON COMPANY, has specialized in the erection of glass enclosures for leading architects, growers, and private owners. The copyrighted trade-mark "Solar V-Bar" identifies all products manufactured by the Company. Lutton Solar V-Bar construction is the lightest, yet the strongest practical greenhouse construction that has been developed. The greater productivity of Lutton greenhouses is explained by the fact that in this design, shadows have been reduced to a minimum.

Superstructure—In the Lutton Solar V-Bar type, the superstructure consists of a framework of iron and steel members, heavily galvanized by the "hot-dip" process *after* fabrication, insuring a thoroughly rustproof structure. This framework consists of cast-iron sills capping the foundation walls, galvanized flat-iron rafters usually curved at the eaves in greenhouses and resting upon the sills. Between the rafters, angle-iron purlins are used to tie the structure together and support the steel Solar V-Bar glazing bars.



36x48-ft. Solar V-Bar Roof Header Glazing Over Court, Fox Chapel Golf Club, Aspinwall, Pa.
BRANDON SMITH & HAROLD O. REIF, Architects

Steel Solar V-Bars—These Solar V-Bars consist of a heavily galvanized steel V-section with a heart cypress core to which the glass is fastened, and which acts as a cushion. The core is held in place by brass screws, each core being treated with a special preservative before being placed in the V-Bar.



Metal Headers—For low pitched roofs, freedom from condensation is obtained by the use of insulated metal header glazing strips. These header strips are made of copper, zinc, aluminum or any other suitable non-corrosive metal of proper strength, and constructed to allow the glass to be butted, so that outside and inside surfaces of the glass are flush. These header strips are made in two sections separated by cork insulators—preventing the outside section which is exposed to cold from coming in contact with the lower or inside section which is subject to the warm inside temperature. Thus condensation is prevented from forming on underside of the interior strip. This lower strip also acts as a gutter and carries the condensation from the glass to the main gutters on the sides of the galvanized Solar V-Bars. Of equal importance is the fact that these headers act as a watertight expansion joint, preventing cracks and possible leaks.

Greenhouse Equipment

The equipment furnished is the best obtainable. It includes the complete heating system (usually hot water) plant benches, hardware, etc., which are furnished in conjunction with the Solar V-Bar construction. The ventilation system installed is of the most modern type. Conservatories, solariums, etc., are provided with special roof ventilation, and with steel casement sash or other methods of side ventilation.

Suggested Dimensions

Following is a list of widths and lengths for standard greenhouses which work out to the best advantage, but units of any width and length can always be provided to meet special conditions. Widths indicated simply work out best from an economic standpoint with respect to the arrangement of growing benches, allowing for the maximum width of benches that can be easily worked and a sufficient width of walk between benches.

Over-all width ft. in.	Lengths										
	ft.	ft.-in.	ft.-in.	ft.-in.	ft.-in.	ft.-in.	ft.-in.	ft.-in.	ft.-in.	ft.	ft.-in.
11-0	17	25-3	33-6	.....	.....	.....	.....	.....	.....	.....	.....
18-0	17	25-3	33-6	41-8	49-11	58-2	66-4	74-7	.....	.....	.....
25-0	17	25-3	33-6	41-8	49-11	58-2	66-4	74-7	82-10	91	99-3

Service

THE WILLIAM H. LUTTON COMPANY, INC. have designed and built greenhouses in all parts of the country to meet all sorts of conditions. This experience is at the disposal of prospective architects and clients in the preparation of plans that will satisfy the architectural requirements and that will, at the same time, be thoroughly practical from an engineering and growing standpoint. When wanted, competent representatives are available for consultation on short notice, and without obligation.

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IRON FENCES—GATES—WIRE FENCES—WINDOW GUARDS AND GENERAL WIRE WORK

Afco fences and gates include plain picket and ornamental designs made of wrought iron, refined iron or steel, in stock or special forms for adaptation to the simplest as well as the most ornate uses.

Afco Chain Link Wire fences are a standardized product, as per specification details presented on the third following page, which include residential, institutional and industrial requirements.

TRADE-MARK

Also for athletic fields, tennis courts and various forms of caging.

For Afco Rustic Cedar fences, see Manufacturers' Index.

ORNAMENTAL AND PLAIN PICKET FENCES AND GATES

This company offers a wide and complete choice of designs in standardized fences and gates, in addition to which it is prepared to execute special-design work from the architect's designs. Some of our work of this kind is pictured here.

Iron Picket fences, because of the possibilities of ornamental design work, are standardized only in respect to the general use of certain plain picket fences of the designs detailed on the following page. Special ornamental gates, fences, railings, etc., are executed in infinite variety.

Catalogs, installation views and blue prints of stock or semi-standard designs are available for reference. We gladly assist in the preparation of specifications that enable the economical production of special designs from standard size materials.

Afco specializes in *genuine wrought iron fences,* but will provide refined iron or mild steel when these materials are required for economy of first cost. Comparative costs of mild steel, refined iron and genuine wrought iron for fences in place are in the approximate ratios of 1-1¼-1½ respectively.

Estimates on fence materials only or fences plus erection will be given. The fullest measure of co-operation is available. Information regarding standard practice in a choice of materials, size of members, dimensions of concrete footings and other practical data is made available for any who will find it helpful.

Installation Views of Afco Plain Fence and Ornamental Gates



CRAFTSMANSHIP

Our facilities for producing ornamental metal work of the highest type of craftsmanship are complete. We have a corps of skilled designers, artisans and metal craftsmen who have had long experience in the ornamental metal trade. Our foundry and shops provide the best facilities for fine work. Architects' details will be executed in accordance with the very best practice known to the trade.

AFCO STANDARD IRON FENCES

The standard iron fences are of the designs and weights shown on this page. Simple ornamentation can be added to the plain designs as required. Special design work originates with the architect, often with our co-operation in preparing a specification which will utilize materials of standard sizes.

Structural Details

Posts—Afco fences are built with beam section line posts which are set in concrete, require no back bracing and are easy to paint. The section is designed to develop maximum strength per pound of metal and to give beauty to the fence without over-heavy members. These posts may have either sheared tops or ornamental heads.

Terminal Posts—Of square tubular shape in appropriate size and with ornamental heads are furnished with all standard fence designs. Special ornamental gate or panel posts can be furnished in place of the standard design.

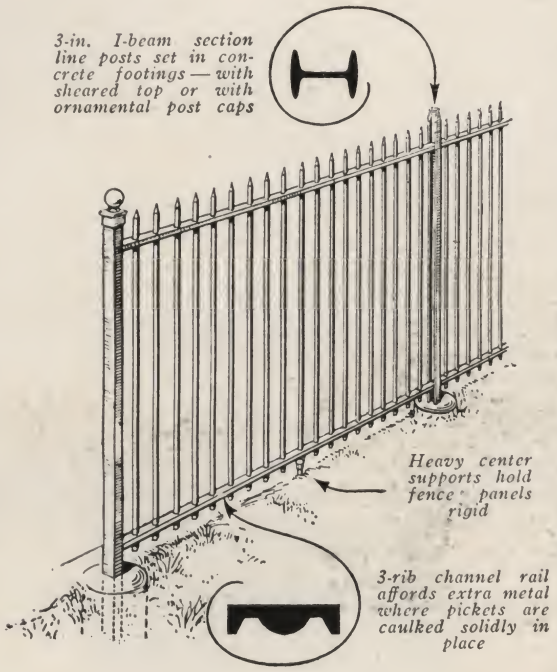
Rails and Caulking—To provide extra strength where the picket passes through the rail, Afco builds with a center rib channel section as shown. This rib provides the extra metal for caulking. The caulking is done by a positive process which recesses two sides of each picket and forces the metal from the rib into this recess, resulting in a positive bond between picket and rail. Except for absolutely straight or level work, it is desirable to provide a certain amount of flexibility in panel sections to accommodate the work to grade or other variations. Our caulking method adapts itself to these conditions more readily than any other method, meets all requirements for strength well beyond the limits of any need—eliminates costly surveys of irregular grades and is less expensive in fabricating.

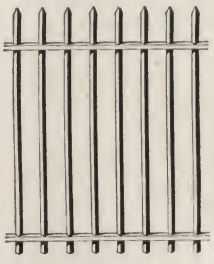
Pickets—All pickets shown with the specification table are square. These pickets can be set square with the rails or they can be set with the diagonal axis parallel to the fence line. The difference is merely a matter of choice as to appearance, a more massive appearance being obtained by the diagonal setting.

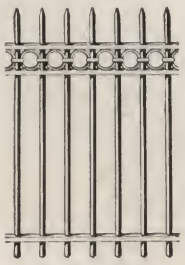
Panel Lengths—The standard panel length may be either 8 or 10 ft. To further increase strength and to insure permanent alignment, each panel is equipped with an adjustable center support set in a concrete footing.

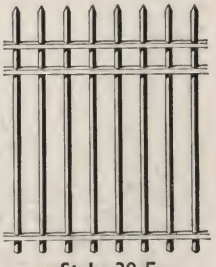
Entrance Gates—Walk or driveway gates, either single or double, are made to match the standard fence designs here illustrated. More elaborate or special design gates equipped with self-oiling ball and socket hinges, also with special cylinder locks can be furnished and will be found illustrated in the Afco general catalog.

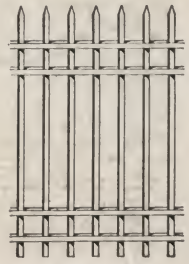
Painting—All standard Afco fences receive a shop coat of red oxide paint. Where Afco erects they will also apply one or more field coats of finishing paint, color as selected.




Style 20-5


Style 35-5


Style 30-5


Style 40-5

Type of fence	Pickets, in.	Picket spacing, c. to c. in.	Channel rails, in.	Length of panels, ft.	Weight, pounds per lineal foot				
					Height of fence (to top of pickets) 4 ft.	5 ft.	6 ft.	7 ft.	8 ft.
20–5	5/8	5	1½x½	10	19	23	26	..	..
20–6	¾	5	2x5/8	10	26	31	36	..	..
20–7	7/8	6	2x5/8	10	..	38	45	52	59
20–8	1	6	2x5/8	10	..	..	55	64	69
30–5	5/8	5	1½x½	10	20	25	28	..	..
30–6	¾	5	2x5/8	10	28	33	38	..	..
30–7	7/8	6	2x5/8	10	..	40	47	54	61
30–8	1	6	2x5/8	10	..	..	57	64	71
35–5	5/8	5	1½x½	10	23	27	30	..	..
35–6	¾	5	2x5/8	10	30	35	40	..	..
35–7	7/8	6	2x5/8	10	..	42	49	56	63
35–8	1	6	2x5/8	10	..	..	59	66	73
40–5	5/8	5	1½x½	10	23	27	30	..	..
40–6	¾	5	2x5/8	10	30	35	40	..	..
40–7	7/8	6	2x5/8	10	..	42	49	56	63
40–8	1	6	2x5/8	10	..	..	59	66	73



Plate 492—Afco Bulwark Fence, 7 Ft. High, Enclosing City Reservoir
This type is standard for schools, parks and public grounds. In heights of 5 to 10 ft.



Plate 495—Afco Type No. 1103 Industrial Fence, 8 Ft. High
Standard for all types of industrial property, athletic fields, asylums, etc. Heights 6 to 10 ft.

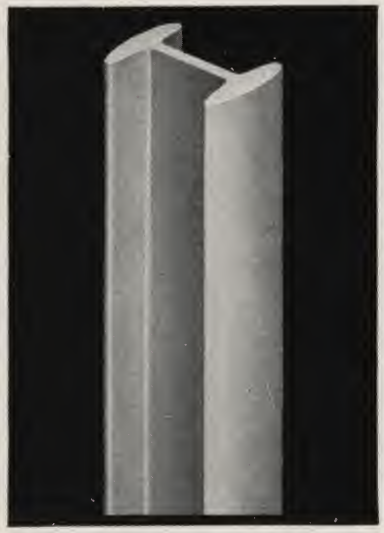
Specification Details of Afco Chain Link Fences

The following table of specification details covers all standard chain link fences. Suburban fence is a light weight lawn fence type made only in 3½ and 4 ft. heights. Guardian fence, a heavier lawn fence type, heights 4 to 6 ft., also suitable for remote school fence lines and residential property lines. Style No. 913 is similar to industrial type fence with barbed wire overhang but with lighter framework and in heights of 5 to 6 ft. only. For private estates, orchards, etc. Style No. 1003 industrial fence is the exact counterpart of style No. 1103 but has no top rail. All materials are hot galvanized *after fabrication.* All posts are set in concrete footings.

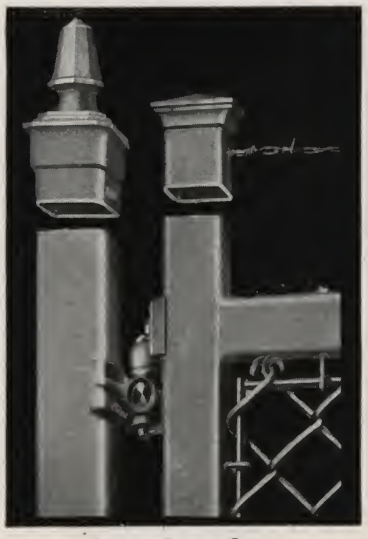
Afco Style	Heights, ft.	Fabric		End and corner posts		Intermediate or line posts			Top rail, diameter, in.	Barbed wire	Gates		Gate posts	
											Width opening			
		Mesh, in.	Gauge wire	Square, in.	Depth footings, ft.—in.	Diam., in.	Spacing, ft.	Depth footings, ft.—in.			Single, ft.	Double, ft.	Square in.	Depth footings, ft.—in.
"Suburban"	3½, 4	2	11 or 9	2	2—6	1⅝ o.d.	8 or 10	2—6	1⅜ o.d.	None	3½, 4	8, 10	2	2—6
"Guardian"	4, 5, 6	2	9 or 6	2	3—0	2 o.d.	10	{2—6 (4' high) 3—0 (others)	1⅝ o.d.	None	3½, 4	{8, 10 12, 14	{2 2½	3—0
"Bulwark"	{5, 6, 7, 8, 9, 10}	2	9 or 6	2½	3—0	2¼ "I"	10	3—0	1⅝ o.d.	None	3½, 4	{8, 10, 12 14 to 24	{2½ 3	3—0
Style "913"	5, 6	2	9 or 6	2	3—0	2 o.d.	10	3—0	1⅝ o.d.	3 strands	3½, 4	{8, 10 12 14	{2 2½	3—0
Style "1003"	{6, 7, 8, 9, 10}	2	9 or 6	2½	3—0	2¼ "I"	10	3—0	None	3 strands	3½, 4	{8, 10, 12 14 to 24	{2½ 3	3—0
Style "1103"	{6, 7, 8, 9, 10}	2	9 or 6	2½	3—0	2¼ "I"	10	3—0	1⅝ o.d.	3 strands	3½, 4	{8, 10, 12 14 to 24	{2½ 3	3—0
"Standard Tennis"	{8, 10, 12}	1¾, 2	11, 9 or 6	2½	3—0	2¼ "I"	10	3—0	1⅝ o.d.	None	3½ All 7-ft. high with transom panel	10	2½	3—0

Notes: Gate frames are of 1¼-in. square tubular members for "Suburban;" 1½-in. square for "Guardian," Style "913" and "Standard Tennis" Fences; 2-in. square for "Bulwark," Style "1003" and Style "1103."

Three Important Features in Afco Construction



Special Beam Section Line Post
The Afco special beam section post is furnished with all fences of heavy construction as indicated in specification table. Weight 4.25 lbs. per foot. The heaviest and strongest line post used in standard fence construction



Square Frame Gate
All Afco gates have square tubular frames, sizes as indicated in specification table. Corners are welded to form a solid panel. Wire work panelled in center and fastened at top and bottom as well as on each side. A special feature not found in ordinary gate construction



Square Terminal Posts
All terminal posts are square tubular members, sizes as indicated in specification table. No outside bands or straps required for attaching the chain link fabric. Fabric cannot be detached from posts from outside

ANCHOR POST FENCE COMPANY

Manufacturers of Iron Fences, Wire Fences and Rustic Cedar Fences

GENERAL SALES OFFICE

Eastern Avenue and Kane Street, BALTIMORE, MD.

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WASHINGTON, D. C., 615 Colorado Building
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FACTORIES: BALTIMORE, MD., CLEVELAND, OHIO and SAN FRANCISCO, CAL.

For Our Page on Rustic Cedar Fences, see Manufacturers' Index

Products

ORNAMENTAL IRON ENTRANCE GATES; ELECTRICALLY WELDED IRON FENCES; GATES and BRIDGE RAILINGS.

WIRE and IRON FENCES of all kinds for country places, residences, parks, playgrounds, institutions, factories, mills, railroads, airports, reservoirs, highway guards, etc.

TENNIS COURT and ATHLETIC FIELD ENCLOSURES; KENNEL, POULTRY and STOCK PADDOCK FENCES; designing and construction of special ENCLOSURES for game, birds, etc.; IRON and WIRE ARBORS, ARCHES and TRELLISES.



TRADE-MARK

Nation-wide Sales and Erecting Service

A chain of Factory Branch Offices located in the principal cities of the United States insures immediate attention to the architects' requirements. Trained crews are maintained for erecting fences under supervision of our main office and branches, insuring good workmanship and an economical job. If desired, we will make surveys for grades and measurements and take entire charge of the work. When a customer prefers to do the erecting, tools and necessary instructions are furnished.

Fences of Special Design

When the Architect desires a design to satisfy local conditions or to match a certain architectural type, our Engineering Department will submit drawings embodying the Architect's wishes, either following out his ideas or taking complete responsibility for the task ourselves.

Estimates and Catalogues

Estimates given for products delivered and set complete in any part of the country. In requesting estimates, send, if possible, a diagram giving dimensions, location of gates, ends and corners.

For the convenience of architects and their specification writers we have prepared a special manual according to specifications for A.I.A. filing system. It contains specification sheets with scale drawings, details and dimensions for standard designs of Anchor Wire and Iron Fences and Gates.

The nearest Anchor office will gladly send you one of these handy manuals. Just write for "A.I.A. File 14-k." (Manual 85.)

ANCHOR ELECTRIC FLANGE-WELDED FENCE AND GATES

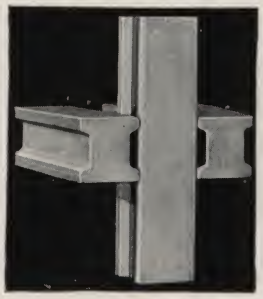
The ANCHOR POST FENCE COMPANY have been manufacturing iron fences for 40 years. About 15 years ago we adopted the electric weld process for manufacturing this product due to its great superiority. As shown in the illustrations, we use grooved square bars: ½, ⅝ and ¾ in. square. The rails consist of these bars in horizontal pairs the length of a panel. Welded between these pairs and at right angles to them, are the pickets. All welding is done on the flange sides of rails and pickets.

The strength of this type of construction is enormous. Not only does it permit making of panels as long as 10 ft., but center support is unnecessary.

Even when supporting an additional weight of several hundred pounds at the center, the rails show little or no deflection and no permanent set. Pickets can not loosen and fall. Gates, made in the same manner as the railing, require no diagonal braces to maintain rigidity.

Elaboration is possible: circles, scrolls, ellipses, and other special features may be introduced, double top or bottom rails may be used, and highly ornamental iron posts or brick, stone, concrete, or cast iron columns may be employed.

Anchor Flange-Welded Bridge Railing is specified for the Golden Gate Bridge at San Francisco.



Grooved Square Bars of Open Hearth Steel



Electrically Welded Under Tons of Pressure



Forming One Solid Piece at Each Intersection

ANCHOR-WELD IRON FENCES AND GATES

For Residences, Schools, Public Buildings and Industrial Plants

Anchor-Weld Iron Fences and Gates are peculiarly appropriate for use on fine residences and estates. Their simple beauty, rugged strength and permanence lend added attractiveness and dignity to the property they protect.

The tremendous strength of their electric-weld construction, the unique grooving of their graceful pickets and rails, their simple lines unmarred by braces, lugs or re-enforcements—these are the principal features that have contributed to Anchor-Weld popularity as demonstrated by the thousands of installations on fine properties throughout the country.



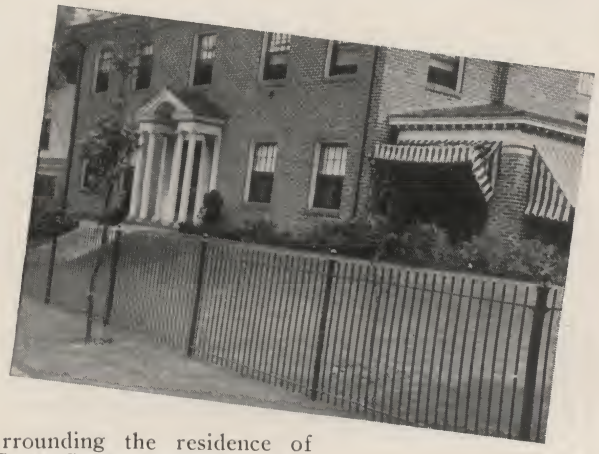
The Anchor Gates shown above are at the entrance to Coulallenby, the beautiful estate of Harry Coulby, Wickliffe, Ohio, and were made from designs by CHARLES C. GRANT, Architect, and JOHN BODDY, Landscape Architect.

For Schools and Playground enclosures, Anchor-Weld Fences possess every desirable quality. They provide real protection, are strong enough to stand unusual abuse, resist the action of the elements and in design and workmanship are fit companions for the really fine architecture they are often called upon to set off.

In fact, whether it be for country estate, an institution, church, cemetery, public building, park, industrial plant, railroad or public utility, Anchor-Weld Fence will not only effectively enclose but will faithfully reflect the character of the property it protects.



Surrounding the Hartford High School, Hartford, Conn., is this Anchor-Weld Fence, Type RA-3, 5 feet high.



Surrounding the residence of H. C. McCrady, Pittsburgh, Pa., is this Anchor-Weld Iron Fence, Type RA-1.



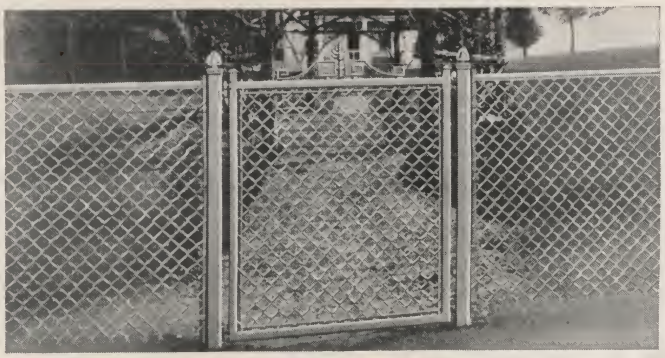
Permanence and artistic merit were the requirements to an enclosure for the Metropolitan Museum of Art, New York, N. Y. An Anchor-Weld, Type RB-3, was selected.



The Willys Corporation of Elizabeth, N. J., selected the Anchor-Weld Entrance Gate and Type RA-3 Anchor-Weld Fence (illustrated above) to protect its property.

ANCHOR CHAIN LINK FENCES

It is our contention that a chain link fence should be not only enduring in construction, but attractive in appearance as well. Anchor Chain Link Fences have been designed with these points in mind. Their four exclusive features—(1) *High carbon steel U-bar Line Posts;* (2) *Square Terminal Posts;* (3) *Drive-anchorage;* (4) *Anchor-Weld Wire Gates*—contribute materially to their exceptional strength and distinction.



Anchor Chain Link Fence
A lawn type of fence with Anchor-Weld Single Wire Walk Gate

Anchor Chain Link Fabric is of best quality copper-bearing steel wire, *galvanized after weaving.* Made of No. 9 and No. 6 gauge wire, the latter being more commonly used. Heights up to 10 ft. The small mesh affords no foothold for climbers and when several strands of barbed wire are placed above the fence fabric an additional safeguard is provided.

Both top rail of galvanized pipe and barbed wire topping are optional.

All parts are heavily galvanized by the hot-dip spelter process.

Anchor Square Terminal Post

An exclusive Anchor feature developed for Anchor Fences. Stronger—because of its square shape; unclimbable—no bands or footholds for trespassers to use as a stepladder; more protective—fabric can not be detached from post from outside; better-looking—has no fabric-holding bands.

Anchor U-bar Intermediate Posts

Because they are U-shaped and are made of high carbon steel, these posts are exceptionally strong and rigid. They are heavily galvanized throughout.

Anchor Drive-Anchorage

To insure permanent alignment of Anchor Fences we set the posts by our *drive-anchor* method, as illustrated. Neither frosts, thaws nor the heavy strains to which a fence is subjected can disturb a fence anchored by this method.

Anchor-Weld Wire Gate

The Anchor-Weld Wire Gate is the latest Anchor development. It marks an important improvement in gate construction.

For the frame of this gate we use square tubular steel, which contributes materially to the attractive appearance, strength and rigidity of the entire gate structure. The horizontal and vertical members of the frame are inseparably *arc-welded* together at the corners. So strong is this construction that no diagonal braces are needed.

Anchor-Weld Wire Gates are made in both single and double types, in a variety of widths.

Types of Anchor Chain Link Fences

Anchor Chain Link Fences are manufactured in a variety of standard types and heights to meet the usual conditions. These are listed below. If the type of fence desired is not included please advise us of your particular problem and we will make specific suggestions for your approval.

In the list the letters of the type symbol will give the architect a clear idea of the distinguishing features of each. They should be interpreted as follows:

"C"—Type C Line Post. See drawing below.
"D"—Type D Line Post. See drawing below.
"O"—Without Top Rail.
"T"—With Top Rail.
"A"—With arm for barbed wire.

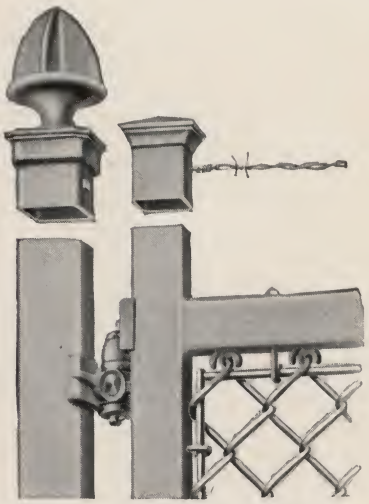
STANDARD TYPES OF ANCHOR CHAIN LINK FENCES

Type	Height, ft.	Type	Height, ft.
CT-1	5, 6	DTA-1	7, 8, 9, 10
CO-1	5, 6	DOA-1	7, 8, 9, 10
DT-1	6, 7, 8, 9, 10	DT-1 Tennis	8, 10, 12
DO-1	6, 7, 8, 9, 10		

Short Form Specification

Provide and install an Anchor Chain Link Fence Type ....., ... ft. .....in. high as manufactured by the Anchor Post Fence Company, Baltimore, Md., or equal, including the necessary gates, terminal posts and fittings, as shown and specified on pages ..... of the Anchor Fence Specification Manual No. 85.

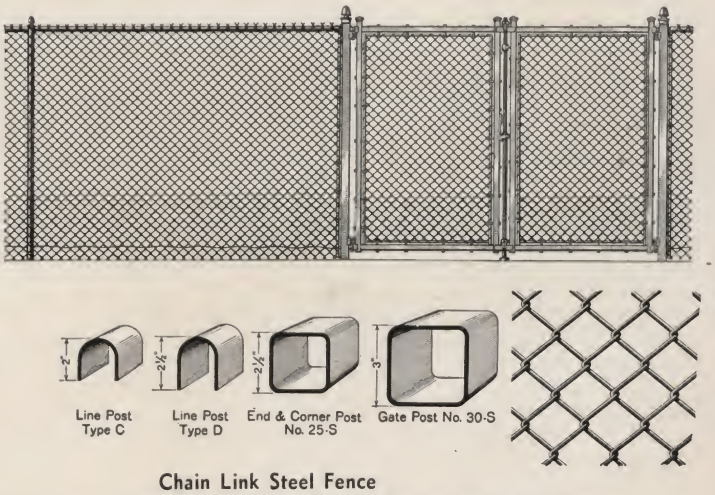
For complete Specification Manual and further information please address the company at any of our branch offices.



Section of Anchor-Weld Wire Gate with Anchor Square Terminal Post



Anchor Drive-Anchorage



Chain Link Steel Fence

Fabric.....Copper-bearing steel wire, galvanized *after* weaving
Line posts..High carbon steel, Type C or D, U-bar, spaced about 10 ft.
End, corner and single gate posts.....No. 20-S or 25-S
Double gate posts.....No. 25-S or 30-S

ATLAS FENCE COMPANY

Protective and Ornamental Iron and Wire Fences

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103 Park Avenue, NEW YORK, N. Y.

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Products

ATLAS CHAIN LINK FENCES AND GATES, for residential, industrial and institutional purposes.

ATLAS WROUGHT PICKET FENCES AND GATES AND ORNAMENTAL ENTRANCE GATEWAYS—in many designs and for all purposes.

Also, Fences for Tennis, Baseball and Playground enclosures; Baseball Backstops, Diamond Mesh Partitions and Window Guards.

Uses

Atlas Chain Link and Wrought Picket Fences meet every requirement of a good fence, especially for industrial plants, railroads, transformer stations, schools, parks, reservoirs, institutions, estates, residences, etc.

Service

Atlas Factory Representatives and Engineers are always ready to render assistance in the solution of all fencing problems. We will submit without cost or obligation, plans and estimates for every fencing need.

Manufacturing Policy and Facilities

At Newark, N. J., easily accessible for quick shipments by rail, boat, or motor truck, we have a complete fence manufacturing plant exclusively devoted to the manufacture of wire and iron fences—handling every step of manufacture from the raw materials to the finished product—a strong and durable fence. Quality must be *in* the material, and all the component parts must be properly related. Extra weight in fence frame construction means nothing, and is needless, unless there is combined with it—strength and durability. It is with especial emphasis on the last two essentials that Atlas Fences are constructed.

Field Construction

No matter where it is erected, a trained crew of experienced salaried Atlas erection engineers personally erect every Atlas Fence. None of our fences are erected under contract with other fence erection crews.

Atlas Chain Link Fabrics

Atlas Chain Link Fence fabric is woven from the very best hard-drawn steel wire, consistent to a close and rigid specification. Every square inch must stand a test of at least 65,000 lb. for tensile strength—a mighty rigid test.

Atlas Chain Link Fence fabric is furnished under the trade name of Atlas "Galvanized-After-Weaving." (See specification chart.)

Atlas Chain Link Fences

The strength and durability of Atlas Chain Link Fences make them ideally adaptable to every situation where a neat attractive fence line for protection or ornamentation is desired. Atlas Fences are manufactured and erected to meet the contours and particular requirements of each particular job.

Atlas Wrought Picket Fences and Gates

Atlas Wrought Picket Fences are made up in various standard styles and sizes, also to meet individual specific requirements. All pickets are permanently locked in place by the Atlas Shur-Tite Compression process, firmly and lastingly bonding the members together. Atlas Fences are not manufactured for "stock" but to meet individual requirements.

Atlas Ornamental Entrance Gateways

Although Atlas Ornamental Gates are usually made in special designs in keeping with the particular plans of the owner, architect or engineer, we are always ready to submit standard styles of Atlas Ornamental Gates.

Catalogue

Send for your copy of our new, profusely illustrated catalogue describing Atlas Fences for every fence requirement.

TYPES AND SIZES, ATLAS STANDARD FENCE FRAME CONSTRUCTION

Types and Heights	Line posts	Min. Concrete Base		Post spacing	Line post tops	*Pressed steel arms, 15¾" long	Barbed wires	End posts	Corner posts	Gate posts			Gate frame—tubular	Gate top finish	Top rail	Middle rail	Horizontal braces	Bolts, nuts and rivets	Rail clamps	Finish
		Depth	Diam.							Single gates up to 6′ opening; double gates up to 12′ opening	Single gates 7′ to 11′ opening; double gates 14′ to 24′ opening	Single gates 12′ to 18′ opening; double gates 26′ to 36′ opening								
Atlas Home: Up to 4′ high	1⅝″	2′ 6″	8″	10′	Certified malleable	None	None	2½″	2½″	2½″	None	None	1⅜″	Scroll	1⅜″	None	None	Bronze bolts and nuts and brass rivets (High tensile strength)	Heavy pressed steel	Hot dipped galvanized
Atlas Heavy Estate: 5′, 6′ and 7′ high	2″	2′ 9″	10″	10′		None	None	2½″	2½″	3″	4″	6⅝″	2″	Plain	1⅝″ B	None	1⅝″			
Atlas Super Estate: 5′ high and up	2½″	2′ 9″	10″	10′		None	None	3″	3″	3″	4″	6⅝″	2″	Plain	1⅝″ B	None	1⅝″			
Atlas Armed: 5′, 6′ and 7′ high	2″	2′ 9″	10″	10′		Arms	3	2½″	2½″	3″	4″	6⅝″	2″ A	Plain	1⅝″ B	None	1⅝″			
Atlas Standard Armed: 5′ high and up	2½″	2′ 9″	10″	10′		Arms	3	3″	3″	3″	4″	6⅝″	2″ A	Plain	1⅝″ B	None	1⅝″			
Atlas Double Armed: 7′ high and up	2½″	2′ 9″	10″	10′		Arms	5	3″	3″	3″	4″	6⅝″	2″ A	Plain	1⅝″	None	1⅝″			
Atlas Estate Tennis: 8′ and 10′	2″	2′ 9″	10″	10′		None	None	2½″	2½″	3″	4″	6⅝″	2″	Plain	1⅝″	None	1⅝″			
Atlas Club Tennis: 8′, 10′ and 12′ high	2½″	2′ 9″	10″	10′		None	None	3″	3″	3″	4″	6⅝″	2″	Plain	1⅝″	Note (D)	1⅝″ D			

*Represents vertically 12 in. in height of fence.

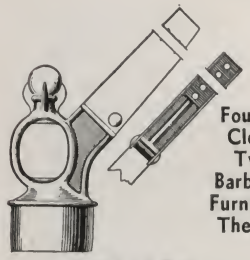
A—3 strands of barbed wires on the gate extend vertically. B—In these types of fence (where the top rail is omitted), a No. 6 gauge (W&M) coil spring cable wire is placed along the top approximately 6 in. below the top selvage of the fabric. D—In fences, 12 ft. high, a middle rail of same size as top rail is recommended,

Atlas High Carbon Steel Fence Posts

In the manufacture of all Atlas High Carbon Open Seam Fence Posts a special high grade steel is used. This, combined with the design of the Atlas Post, assures extraordinarily high section modulus which results in superior strength, maximum durability and unsurpassed economy. The open seam prevents condensation on the inside of the post. The Atlas tubular post, one of the strongest shaped fence members, contains a high carbon content of .35 to .60 per cent, is properly heat-treated, refined and close grained, thus insuring the strongest and most lasting fence frame construction. All bolts and nuts are bronze of high tensile strength and brass rivets are used. Specifications for sizes, etc., see preceding page.)

All Atlas Posts are set in substantial concrete bases and, in addition, filled with concrete to well above the ground line.

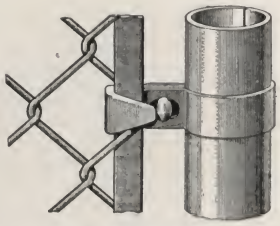
Complete engineering data with tests furnished on request.



Four-point, Close-set, Two-ply Barbed Wire Furnished for These Arms

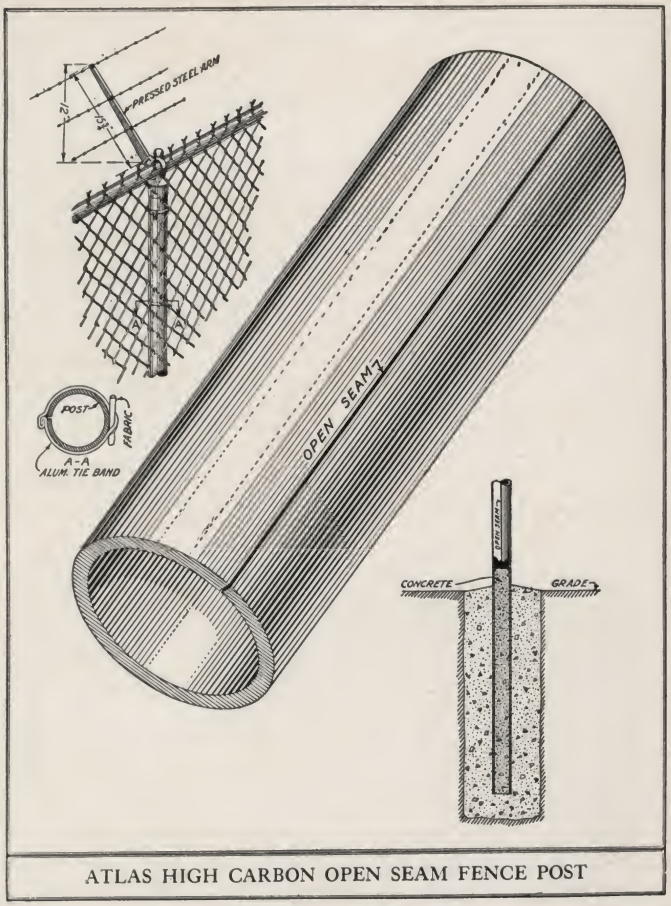
Detail of Top

Showing arm to carry three barbed wires



Detail of Atlas Boltless Fitting

Showing Atlas high carbon open seam tubular post



ATLAS HIGH CARBON OPEN SEAM FENCE POST

Test Against Pipe Post and Angle Post

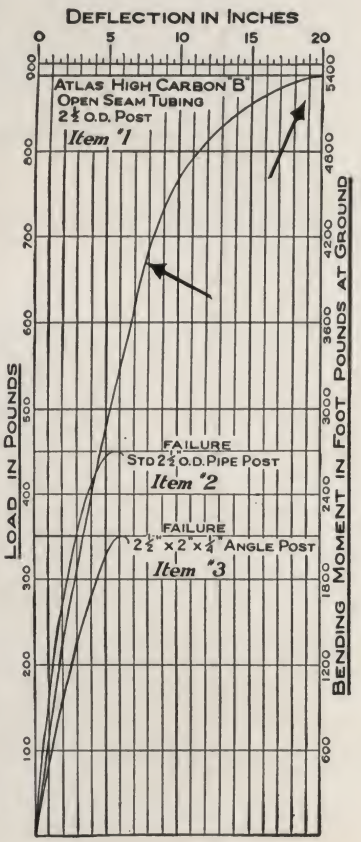
This test was made to determine relative strength of various sections used as standard fence posts.

Item 1—Atlas standard high-carbon open-seam post 2⅜ in. but nominally specified by Atlas Fence Company as 2½-in. outside diameter. The standard mill weight listed as 3.12 lb. per ft., galvanized. Actual weight of post tested 3.30 lb. per lin. ft., hot galvanized; wall thickness $\frac{9}{64}$ in. (.140).

Item 2—This was a standard 2½-in. outside diameter copper-bearing galvanized pipe post. The rated weight being 3.65 lb. per lin. ft.; wall thickness $\frac{11}{64}$ in.

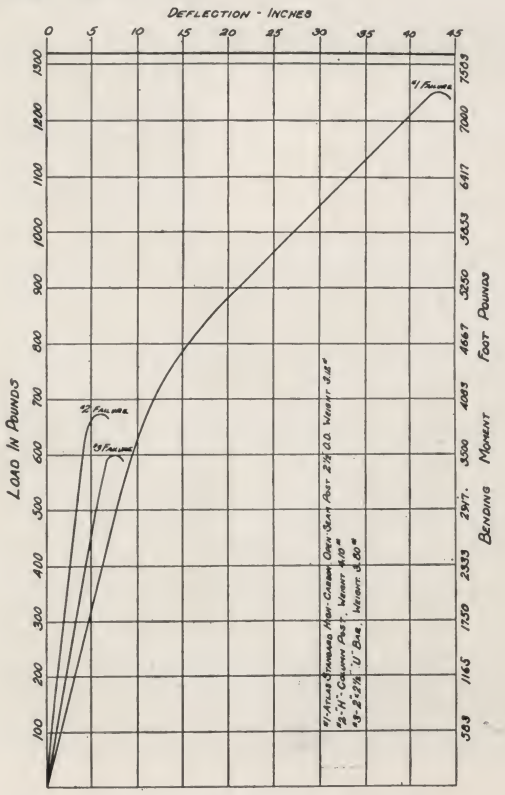
Item 3—Angle posts of 2½ x 2 x ¼ in. and identified as commercial steel angle. The listed weight being 3.7 lb. per lin. ft. and the actual weight of post tested 3.55 per lin. ft. The post was tested with 2½-in. flange of angle in line with the pull.

Reference to the graph will show that in this test, made without prejudice by the Pittsburgh Testing Laboratory, *the Atlas standard high-carbon open-seam post had 100% greater strength than the pipe post (Item 2 on graph) and more than 150% greater strength than the angle post of commercial steel (item 3).*



Test Against U and H Bars

In this test, Atlas Posts were tested against H and U bars of greater weight and were again found superior in strength. A standard Atlas post 2½ in. outside diameter, weight 3.12 lbs. (item 1 on graph), and H column post weighing 4.10 lbs. (item 2) and a 2x2½-in. U bar weight 3.80 (item 3) were used in this test. The Atlas Post showed a 100% greater strength than the bars.



Tests of Posts Conducted by Pittsburgh Testing Laboratory Show Atlas Post Superior in Strength

CINCINNATI IRON FENCE COMPANY, INC.

Manufacturers of Ornamental Iron and Wire Work

3330 Spring Grove Avenue
CINCINNATI, OHIO

Products

ORNAMENTAL and PLAIN IRON and WIRE WORK of every description and for every purpose.

Steel and Iron Fence suitable for residences, estates, school grounds, parks, etc.; Gates for interior or exterior—swinging, folding and sliding; Wire and Iron Window Guards, Grilles, Grating, Shutters and Partitions, etc.

Estimates

Blue prints on request. Estimates cheerfully given.

Fencing Design and Construction

The dominant feature of Cincinnati Iron Fencing is its rugged strength, coupled with attractive design.

Rails—Made of channel angle or flat sections.

Pickets—Square, round, flat or angle, suitable thickness according to height required, pointed or tipped with malleable iron heads.

Posts—Made in large variety of sizes and styles to harmonize with the architectural surroundings.

INTERIOR IRON GATES, RAILINGS AND GRILLES



No. 709 Interior Railing for One Tread

No. 2380 Arch for bookcase. Design can be made suitable for arched doorway between living room and dining room.

No. 682 Interior Gates
Width and height to suit your individual requirements





No. 620 Railing
Can be made of any size material desired



No. 701 Railing
All material furnished ready to assemble on the job

EXTERIOR IRON FENCES, RAILINGS AND GATES

Below:

No. 704 Deck Railing

1x½x⅛-in. channel rails; 1x¼-in. cover bar; ½-in. sq. pickets 4-in. centers; 1-in. sq. corner posts, with plate drilled for wood; can be made any height desired



Left:

No. 459 Balcony

1x½x⅛-in. channel top rail; 1x¼-in. half oval cover bar; ½-in. sq. pickets 4-in. centers; 1½x1½x$\frac{3}{16}$-in. angle frame for floor with 1x$\frac{3}{16}$-in. filling bars, 1 in. apart; 1x$\frac{3}{16}$-in. brackets at corners; can be made any length or height desired





Right:

No. 491 Railing

1x½x⅛-in. channel rails; 1x¼-in. half oval cover bar; ½-in. sq. pickets 4-in. centers; ½x¼-in. diamond and ring ornament; cast heads on posts



Above:

No. 521 Railing

1x½x⅛-in. channel rails; 1x¼-in. half oval cover bar; ½-in. sq. pickets 4-in. centers; ½x$\frac{3}{16}$-in. scroll ornaments; made in sections ready to bolt together



No. 2800 Drive Gates
Can be made any width or height desired



No. 2101 Drive Gates
Can be made any width or height desired

CYCLONE FENCE COMPANY

Subsidiary of United States Steel Corporation

WAUKEGAN, ILL.

WORKS AND OFFICES

NORTH CHICAGO, ILL. DE KALB, ILL. CLEVELAND, OHIO FORT WORTH, TEX. OAKLAND, CALIF.
GREENSBURG, IND. NEWARK, N. J. TECUMSEH, MICH. PORTLAND, ORE.

DIRECT FACTORY BRANCHES

ALBANY, N. Y.	CHICAGO, ILL.	HARTFORD, CONN.	MINEOLA, N. Y.	PROVIDENCE, R. I.
ATLANTA, GA.	CINCINNATI, OHIO	HOUSTON, TEX.	MINNEAPOLIS, MINN.	PITTSBURGH, PA.
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BOSTON, MASS.	DALLAS, TEX.	JACKSONVILLE. FLA.	PEORIA, ILL.	SHREVEPORT, LA.
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CHARLOTTE, N. C.		MILWAUKEE. WIS.		WASHINGTON, D. C.

PACIFIC COAST DIVISION: Standard Fence Company, OAKLAND, LOS ANGELES, SAN FRANCISCO, CALIF., PORTLAND, ORE., SEATTLE, WASH.

Specifications, Cyclone Safeguard Chain Link Fence

Built in heights from 4 ft. up to and including 10 ft. Chain Link fabric is full height of fence.

Fabric—"Galv-After" Chain Link copper-steel wire heavily zinc-coated by hot-dip process after weaving. No. 9 or No. 6 gauge wire woven in a 2-in. mesh. On heights 5 ft. and over, both edges of fabric have twisted and barbed finish. On heights 4 ft. and lower, one edge has twisted and barbed finish, the other has knuckled finish and it is recommended that the knuckled edge be placed at top of fence dressed below top rail with the barbed edge at the bottom.

Posts—***Line Posts***—Hot-dip galvanized: 2-in. H-column copper-steel, weight 4.10 lb. per lin. ft. when fence is 6 ft. and over in height. When fence is less than 6 ft. in height, 2-in. outside diameter, weight 2.72 lb. per lin. ft.

End, Corner, Angle and Pull Posts—3-in. outside diameter, weight 5.79 lb. per lin. ft. when fence is 6 ft. and over in height. When fence is less than 6 ft. in height, these posts are 2½-in. outside diameter, weight 3.65 lb. per lin. ft.

Gate Posts—The size and strength of gate posts for swinging and sliding gates have been carefully determined by our Engineering Department. Details upon request.

Post Spacing—Posts are spaced in line of fence not farther apart than 10-ft. centers.

Depth of Posts—Line posts for fence 4 ft. or lower are set 24 in. in concrete base; terminal posts 30 in. In 5-ft. fence, line posts are set 30 in., terminal posts 36 in. In Cyclone Safeguard Fence 6 ft. in height and over, all posts are set 36 in.

Post Setting—Concrete post bases are of proper mixture, size and shape to furnish sufficient foundation.

Post Tops—Hot-dip galvanized. All posts fitted with heavy ornamental post tops of malleable iron.

Top Rail—Hot-dip galvanized. Tubular copper-steel 1⅝-in. outside diameter, weight 2.27 lb. per lin. ft. when fence is 5 ft. or over in height. When fence is 4 ft. or lower, top rail is 1⅜ in. outside diameter. Provided with expansion rail couplings. Top rail passes through post tops and forms a continuous brace from end to end of each stretch of fence.

Braces—Hot-dip galvanized, furnished only on fences 6 ft. and over in height. End, gate and corner posts are braced by tubular copper-steel braces 1⅝-in. outside diameter, weight 2.27 lb. per lin. ft. Braces are spaced midway between the top rail and ground and extend to the first line post, fastened by malleable iron or pressed steel connections, then trussed from line post back to end, gate or corner post.

Fittings—All fittings used with Cyclone Safeguard fencing and gates are malleable iron, pressed steel or aluminum.

Fabric Bands—Aluminum. Fasten the fabric to line posts and top rail.

Finish—All materials entering into the fence construction, except aluminum bands, are heavily hot-dip galvanized.



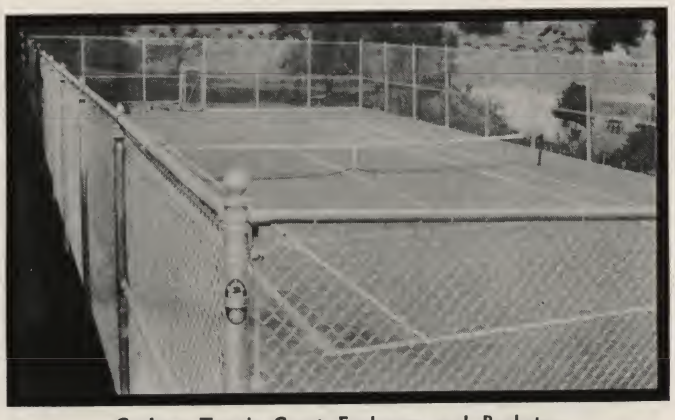
Cyclone Safeguard Fence

Beautiful and dignified property protection for country estates and homes—also golf grounds and clubs



Cyclone Invincible Chain Link Fence

Standard height, 7 ft. Built in heights up to and including 11 ft. Extension arms carry 3 rows of 4-point barb wire 12 in. in or out from fence line. All other specifications same as Safeguard Fence, 6 ft. or higher



Cyclone Tennis Court Enclosure and Backstop

Standard height 10 ft. Special heights furnished if required. Fabric is No. 11 gauge copper-steel wire woven into a 1¾-in. mesh galvanized after weaving. All other specifications same as Safeguard Fence 6 ft. or higher

Cyclone—Not a "Type"

Cyclone is not a "type" of fence but is fence made by Cyclone Fence Company and identified by this trade-mark.

Specifications, Cyclone Swinging Gates

Standard Sizes—Single swing walk gates built standard for 4-ft. opening. Double swing gates for driveways built standard for 8 to 18-ft. openings. Where conditions are such that standard sizes cannot be used, gates are built to meet requirements.

Frames—Hot-dip galvanized, tubular copper-steel. In heights 6 ft. or over, frames are 2-in. outside diameter. Gates 5 ft. high have 1⅞-in. outside diameter frames; under 5 ft. high have 1⅜-in. outside diameter frames. Corner fittings are extra heavy malleable iron.

Stays—Hot-dip galvanized, tubular copper-steel. Stays, together with ⅜-in. adjustable truss rods, keep gate absolutely rigid; prevent sagging, buckling and side weave.

Fabric—Cyclone "Galv-After" Chain Link to match fabric used in fence.

Hinges—Hot-dip galvanized. Made of malleable iron. Exceptionally large bearing surface for clamping hinge on gate post. Bottom hinge is ball and socket pivot type. Cyclone hinge equipment will carry 100% overload.

Latch and Lock—Hot-dip galvanized. Plunger bar type with positive latch; arranged for padlock locking. Double drive gates equipped with catch posts to hold gates in open position.



Safeguard Fence with Wrought Iron Gate

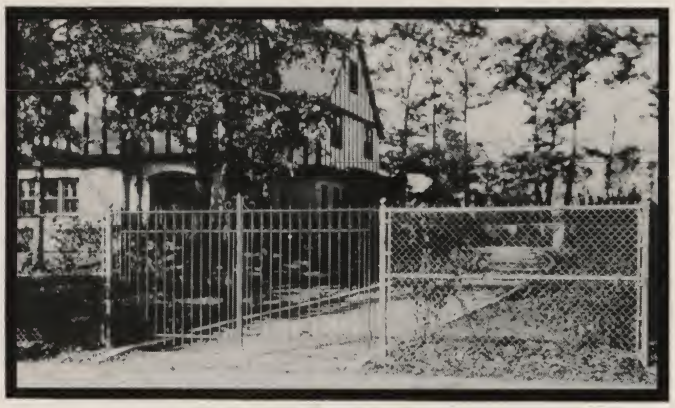
Standard heights: 36, 42 and 48 in. Framework, tubular copper-steel hot-dip galvanized. Fabric "Galv-After" Chain Link copper-steel No. 9 gauge, 2-in. mesh

Cyclone Iron Fence and Gates

Cyclone Iron Fence, built by artisans with years of training, can be fabricated from special designs from architect's drawings, or from designs developed in Cyclone Art Department. Also made in several standard patterns. Made in any height and of any size materials.

Entrance gates fabricated from architect's special designs and also furnished in several standard designs.

Gate in illustration below has been especially designed to harmonize with Safeguard Chain Link Fence.



Cyclone Wrought Iron Double Gate

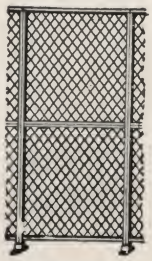


Cyclone Swinging Gates

Either single or double, for Safeguard Fence

Wire Work of All Kinds

Partitions (Built-in-Sections)—Standard size sections 4 ft. wide, 8 ft. high. Frames are 1-in. channel iron. Fabric is No. 10 gauge wire woven in 1½-in. diamond mesh. Furnished with either swinging or sliding gates. Handholes or wickets provided where needed. Floor flanges furnished for either wood or concrete floors. Sections are interchangeable, movable; can be taken out and used elsewhere—no refitting—no loss.

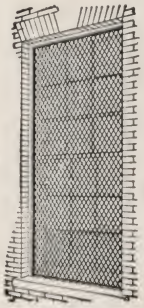


Partition Section

Send blue print or layout of partition work wanted.

Window and Skylight Guards—Frames are 1-in. or ¾-in. channel, or ⅜-in. round iron. Fabric is usually No. 10 gauge wire woven in 1½-in. diamond mesh. Channel iron frames fit into openings. Round iron frames usually allow ¾ in. on all sides for lap.

Special guards built with either channel or round iron frames, using size of wire and mesh desired.



Window Guard



Cyclone Iron Entrance Gates

A dignified entrance is sure to cause much favorable comment

Complete Responsibility—Nation-wide Fencing Service

Engineering Counsel—Cyclone Engineers will make a complete study of your fence requirements and submit recommendations, layouts, and estimates of cost.

Cyclone Erection Crews—There are many erection crews constantly at work installing Cyclone Fence. One of these crews is available for your installation. However, if you prefer to have your own workmen install the fence, a Cyclone erection superintendent will be furnished at nominal charge, to direct them.

Diagram, Prices, etc.—When writing for information, prices, etc., send simple diagram of proposed fencing. Give measurements of each stretch and total measurements. State whether single or double swing, or sliding gates are wanted and give size of opening.

PAGE FENCE ASSOCIATION

929 Connecticut Avenue
BRIDGEPORT, CONN.

MEMBER COMPANIES

Distributing Chain Link Products of the Page Steel and Wire Company, an Associate Company of the American Chain Company, Inc., Bridgeport, Conn.

ALABAMA: BIRMINGHAM—Ingalls Iron Works
MOBILE—Turner Supply Co.
ARKANSAS: LITTLE ROCK—Arkansas Foundry Co.
CALIFORNIA: LOS ANGELES—Southern California Fence Co.
SAN FRANCISCO—Michel & Pfeffer Iron Works
COLORADO: DENVER—Stearns-Roger Mfg. Co.
CONNECTICUT: BRIDGEPORT—T. M. Barnes
NEW HAVEN—The John P. Smith Co.
WESTPORT—Page Fence Exhibit
FLORIDA: MIAMI—E. F. Holmes
ORLANDO—Harry P. Leu, Inc.
TAMPA—Tampa Marine Co.
GEORGIA: ALBANY—Albany Hardware & Mill Supply Co.
ATLANTA—J. R. Whitman
AUGUSTA—Barrett Supply Company
COLUMBUS—Pekor Iron Works
MACON—Willingham Sash & Door Company
SAVANNAH—Savannah Iron & Wire Works
ILLINOIS: CHICAGO—Chicago Fence & Wire Co.
INDIANA: INDIANAPOLIS—Hoosier Fence & Wire Co.
IOWA: DES MOINES—Des Moines Steel Co.
KENTUCKY: LOUISVILLE—The Equipment & Supply Co.
LOUISIANA: NEW ORLEANS—Orleans Steel Products Co.
SHREVEPORT—Beaird Corporation
MAINE: SO. PORTLAND—Bancroft & Martin Rolling Mills
MARYLAND: BALTIMORE—Horace T. Potts & Co.
CUMBERLAND—Young Sales & Engineering Co.
MASSACHUSETTS: BOSTON—C. A. Gates & Co.
SPRINGFIELD—Cheney Bigelow Wire Works
MICHIGAN: DETROIT—Barnes Wire Fence Co.
FLINT—Koehler Bros.
GRAND RAPIDS—Burkhardt Brothers Company
SAGINAW—Koehler Bros.
MINNESOTA: DULUTH—W. P. & R. S. Mars Co.
MINNEAPOLIS—Crown Iron Works Co.
MISSISSIPPI: JACKSON—Mississippi Steel & Iron Works
MISSOURI: KANSAS CITY—Kansas City Wire & Iron Works
ST. LOUIS—Sears and Piou, Inc.
NEBRASKA: LINCOLN—Lincoln Steel Works
OMAHA—Gate City Iron Works
NEW YORK: BINGHAMTON—C. Y. Cushman
BUFFALO—Buffalo Fence Construction Co.
FORT EDWARD—Newton & Hill, Inc.
NEW YORK—Brook Iron Works
NEW YORK: ROCHESTER—National Fence Co.
TROY—Fred K. Blanchard, Inc.
WATERTOWN—Thos. H. Bradley
NORTH CAROLINA: CHARLOTTE—General Equipment Co.
WILMINGTON—Gregg Bros.
OHIO: ASHVILLE—J. S. Roof
CINCINNATI—The Davis & Siehl Co.
CLEVELAND—The Betz-Pierce Co.
COLUMBUS—Henry P. Howe Co.
PORTSMOUTH—Standard Supply Co.
WASHINGTON COURT HOUSE—W. W. Wilson & Son
ZANESVILLE—Wilking Hardware Co.
OKLAHOMA: OKLAHOMA CITY—Capitol Steel & Iron Co.
TULSA—The Peerless Supply Company
OREGON: MEDFORD—Volney Dixon
PORTLAND—Portland Wire & Iron Works
PENNSYLVANIA: ERIE—Erie Concrete & Steel Supply Co.
PHILADELPHIA—Horace T. Potts & Co.
PITTSBURGH—Stewart-Holland Co.
SCRANTON—The Bittenbender Co.
RHODE ISLAND: PROVIDENCE—Rayhill & Greene Supply Co.
SOUTH CAROLINA: CHARLESTON—The Bailey Lebby Co.
TENNESSEE: CHATTANOOGA—James Supply Co.
JOHNSON CITY—Johnson City Foundry & Machine Co.
KNOXVILLE—S. T. Weaver Co.
MEMPHIS—Miller-Cochran Co.
NASHVILLE—Kerrigan Ornamental Iron Works Co.
TEXAS: DALLAS—Dallas Belting Co.
EL PASO—Neff-Stiles Co.
FORT WORTH—Fort Worth Structural Steel Co.
HOUSTON—Vincent A. Tozzi Co.
SAN ANTONIO—Southern Steel Co.
UTAH: SALT LAKE CITY—Consolidated Wagon & Machine Co.
VERMONT: POULTNEY—Gray Foundry, Inc.
VIRGINIA: DANVILLE—Vass-Mobley Hardware Co.
RICHMOND—Richmond Machinery & Equipment Co.
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WASHINGTON: SEATTLE—Galbraith & Co.
SPOKANE—Building Supplies, Inc.
WEST VIRGINIA: CHARLESTON—Baldwin Supply Co.
HUNTINGTON—West Virginia-Kentucky Hardware & Supply Co.
PARKERSBURG—Parkersburg Supply Co.
WHEELING—Wheeling Structural Steel Co.
WISCONSIN: MILWAUKEE—A. F. Wagner Architectural Iron Works
IN CANADA: NIAGARA FALLS, ONTARIO—Dominion Chain Co., Limited

Products

CHAIN LINK FENCING for protection and ornamental purposes of every description.

WROUGHT IRON FENCING for industrial, institutional and residential purposes.

INDUSTRIAL FENCING for factories, mills, refineries, railroads, power stations, mines, yards, etc.

FENCING for city, state and national institutions, including schools, parks, playgrounds, prisons, hospitals, etc.

ENCLOSURES for athletic fields, tennis courts, baseball grounds, amusement parks, aviation fields, automobile parking enclosures, etc.

Also manufacturers of Page "Hi-Way" Guard; Panel Partitions made of Page Chain Link fabric, for factories, offices, warehouses, stockrooms, etc.; Fencing and Entrance Gates of copper-bearing steel for residences, estates, country clubs, etc.



The first wire fence ever made was designed by J. Wallace Page in 1883. For 49 years Page Fences have been standards of good fence design.

Page Offers These Four Metals to Suit Your Requirements

Page Fence is available in four different metals, selection being made according to local atmospheric conditions. Our fencing experts in your territory will be glad to advise you as to the kind of Page Fence that will give the longest service.

(1) Page Aluminum Fabric—The ultimate achievement of the Page organization. It is highly resistant to corrosion and will retain its rich medium gray color without the need of surface protection. Discriminating buyers will investigate Page Aluminum Fabric where beauty, permanent protection and ultimate economy are desired.

(2) Page-Armco Ingot Iron Fabric—(Exclusive with Page.) Made of the purest and most uniform of ferrous metals. Wherever elements exist that would be harmful to even the finest copper-bearing steel protected by galvanizing, Page-Armco Fence has proved to give exceptional service.

(3) Page Copper-bearing Steel Fabric—Made of copper-bearing steel of analysis conforming to specifications of the American Society of Testing Materials. The framework supporting Page Fence Fabrics is made of basic open hearth or copper-bearing steel. For the heavier and more durable types of construction, Page H-Section Line Posts complete a structure that will withstand every ordinary form of use and abuse.

(4) Page Wrought Iron Fence—Made under Page supervision and in accordance with the high standards of Page craftsmanship. Wrought iron is "the most enduring of all metals" which results in Page Ornamental Wrought Iron Fence—desirable wherever dignified protection is needed. The iron in this fence is in accordance with A.S.T.M. Specification Serial Designations: A-41-18.

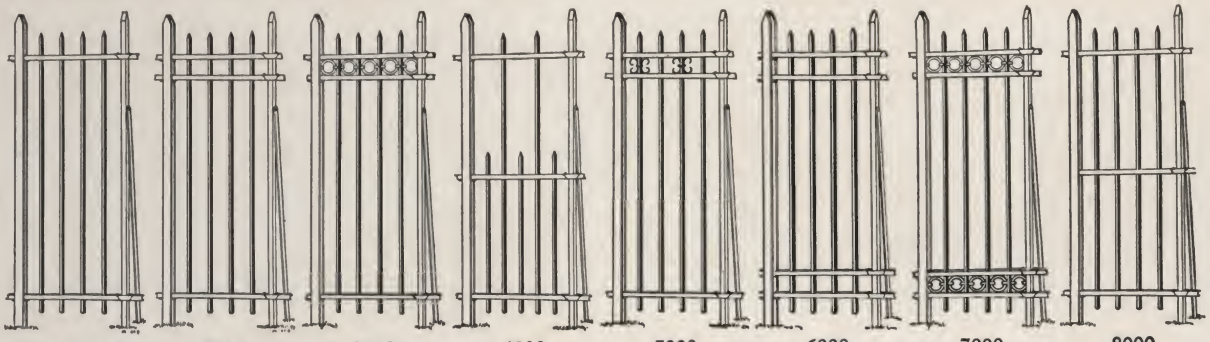
82 Service Plants

In each district of the United States and Canada there is a responsible firm of fence engineers that carries complete stocks of Page products and specializes in fence construction. This assures expert performance of the work all the way through, and gives the advantage of consultation with men of long experience in the erection of fences.

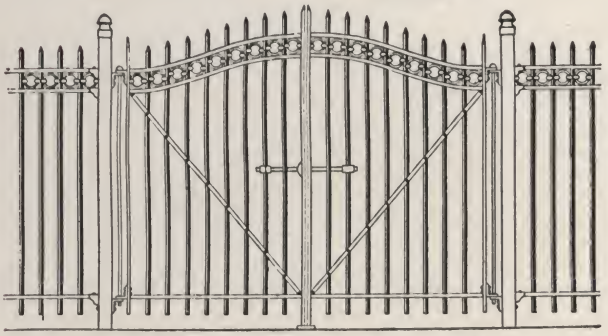
Estimates are gladly furnished on receipt of rough sketches of proposed work, or complete detailed design will be drawn up, if desired, and estimates supplied. Get in touch with the distributor nearest you, as listed above or write direct to Association headquarters for interesting literature.

Page-Highland Wrought Iron Fence

Page-Highland Wrough Iron Fence harmonizes with the beauty of lawns and gardens while it enforces a rigid "keep out." It represents a definite boundary and insures privacy at all times. Children can play in peace and safety away from malicious characters and fast moving traffic. For schools, athletic fields and institutions, Page Wrought Iron Fence insures a double barrier. Crowds are always under control—paid admissions are increased and you are assured of an artistic fence that will harmonize with the natural beauty of your grounds.



Style 1000 | 2000 | 3000 With oval rings 3000-D | 4000 | 5000 | 6000 | 7000 With oval rings 7000-D | 8000



Page O.G. Double Drive Gate Style 3000

Fence Styles—Above is shown a direct comparison of the various standard styles of Page Wrought Iron Fence.

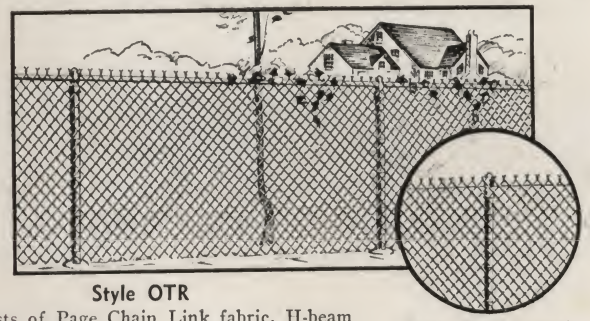
Each cut is shown with H-beam line post on left side and solid 2-in. flat line post with brace on right side. By using different types of line, terminal and newel posts, a wide assortment of different fences is made available. However, should architectural plans require some other design, prices will be quoted on receipt of detailed drawings.

Gates will be furnished to match the style of fence ordered.

Page Chain Link Fence Styles

To guard against corrosion and rust and to assure many years of satisfactory service under the most adverse conditions, Page Fabric is heavily galvanized after weaving with a uniform coat of zinc—approximately five times heavier than ordinary galvanizing. This is applied by a hot dip process perfected by Page and assures uniformity.

Illustrations below show the various styles in which complete Page Chain Link Fence can be supplied.

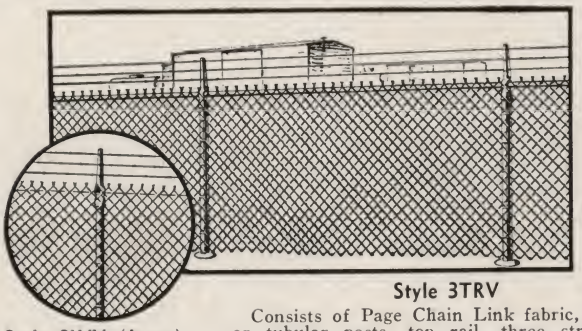


Style OTR

Consists of Page Chain Link fabric, H-beam or tubular posts, top rail, and all necessary fittings

Style OW (Inset)

Similar to OTR, except tension wire is furnished in place of top rail

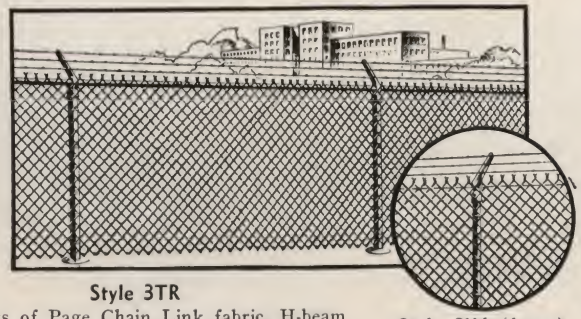


Style 3WV (Inset)

Similar to 3TRV, except tension wire is furnished in place of top rail

Style 3TRV

Consists of Page Chain Link fabric, H-beam or tubular posts, top rail, three strands of barbed wire in a vertical plane and all necessary fittings

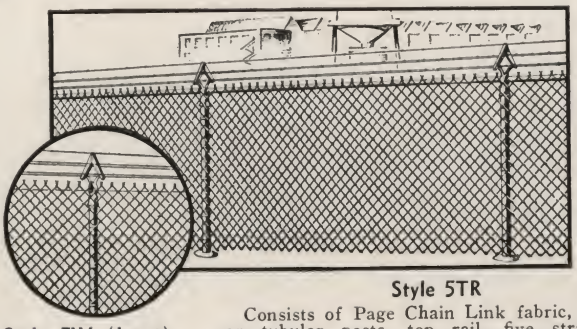


Style 3TR

Consists of Page Chain Link fabric, H-beam or tubular posts, three strands of barbed wire, and all necessary fittings

Style 3W (Inset)

Similar to 3TR, except tension wire is furnished in place of top rail



Style 5W (Inset)

Similar to Style 5TR, except tension wire is furnished in place of top rail

Style 5TR

Consists of Page Chain Link fabric, H-beam or tubular posts, top rail, five strands of barbed wire and all necessary fittings

PITTSBURGH STEEL COMPANY

Manufacturers of Pittsburgh Chain Link and Other Pittsburgh Fences

GENERAL OFFICES
Union Trust Building, PITTSBURGH, PA.

DISTRICT SALES OFFICES IN PRINCIPAL CITIES

Pittsburgh Chain Link Fences

Pittsburgh Chain Link Fences are made to a standard of quality which is the result of more than twenty-five years' experience on the part of our Engineering and Production Departments in the manufacture and development of wire products.

We control every step in the manufacture of Pittsburgh Chain Link Fence from the ore to the finished product, and thus not only maintain uniform high quality but can sell this high grade product at no premium over other chain link fences.

All Pittsburgh Chain Link Fabric is made of the finest copper-bearing basic open hearth steel, fabricated by the most modern equipment and hot zinc coated after weaving with a smooth, extra-heavy and well-bonded coating of pure zinc.

Other Pittsburgh Fences

In addition to the Chain Link styles, we manufacture a variety of other types of wire fences for Industrial, Home, Farm and Miscellaneous uses. All Pittsburgh Fences are copper-bearing and heavily hot zinc coated. Write our Pittsburgh office for further information and catalogues.

For Pittsburgh Steeltex (wire reinforcing mesh with integral fibrous backing) for Stucco, Plaster, Tile and Brick or Stone Veneer Reinforcing, Partitions, Suspended Ceilings, etc.—see Manufacturers' Index.

For Pittsburgh (National) Reinforcing (welded wire fabric) for building roads, streets, sidewalks, driveways, runways, canals, concrete pipe, gunite and all other types of concrete construction; for Pittsburgh Steeltex Lath for floors and roofs (concrete and gypsum)—see Manufacturers' Index.

SPECIFICATIONS

Pittsburgh Custodian Chain Link Fence

(Standard Heavy Construction)

Standard height, 7 ft. overall. Built in heights from 6 ft. up to and including 12 ft. In all heights chain link fabric is 1 ft. less than overall height of fence.

Fabric—Pittsburgh Chain Link copper-bearing basic open hearth steel wire, hot galvanized after weaving with heavy zinc coating. No. 6 or No. 9 gauge wire woven in 2-in. mesh. Selvage: both edges have a twisted and barbed finish.

Line Posts—2¼-in. H-section, weight 4.10 lb. per ft., or 2½-in. outside diameter seamless steel pipe, weight 3.652 lb. per ft.

Top Rail—1⅝-in. outside diameter seamless steel pipe, weight 2.272 lb. per ft.

Terminal Posts—End and corner posts 3-in. outside diameter seamless steel pipe, weight 5.79 lb. per ft.

Swing Gate Posts—3-in. outside diameter seamless steel pipe, weight 5.79 lb. per ft. for single swing gates up to and including 6-ft. opening, and for double swing gates up to and including 12-ft. opening.

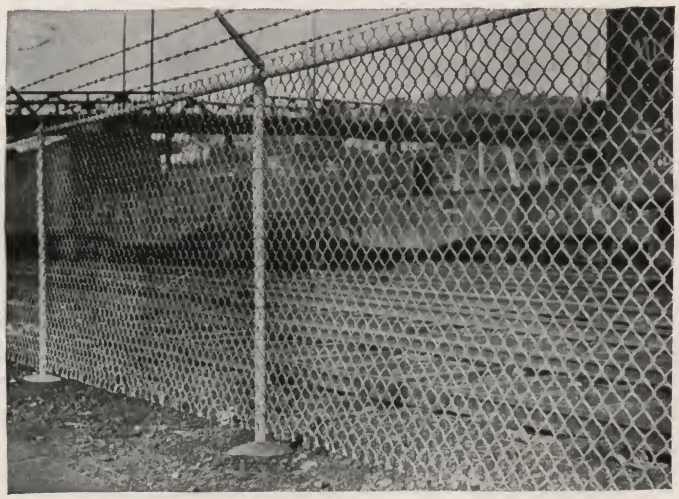
4-in. outside diameter seamless steel pipe, weight 9.10 lb. per ft. for single swing gates wider than 6 ft., up to and including 13-ft. opening. Also, for double swing gates wider than 12-ft. opening up to and including 26-ft. opening.

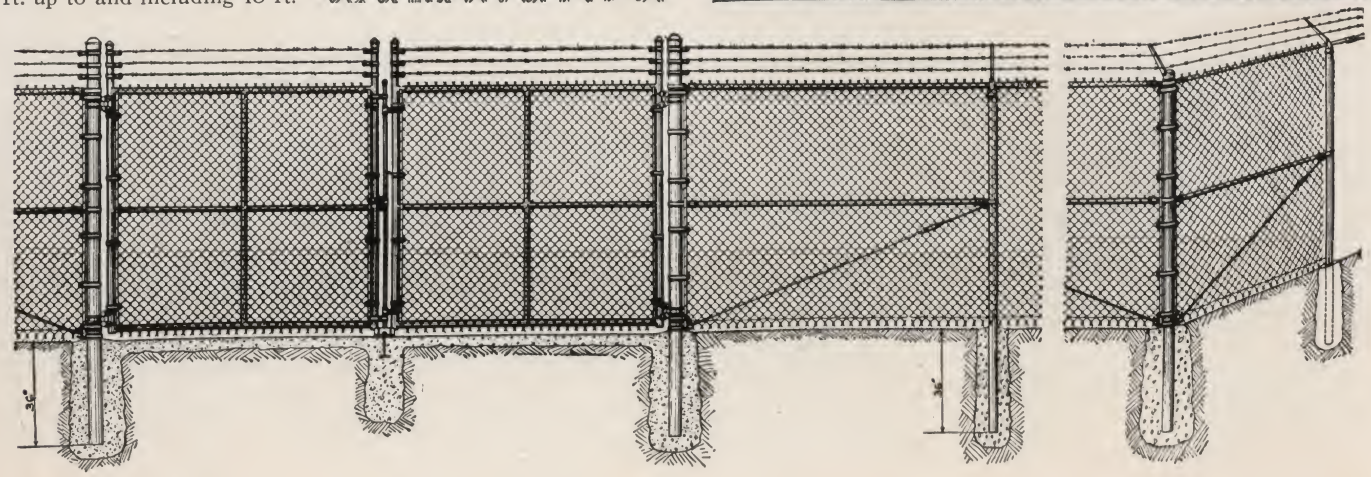
6⅝-in. outside diameter seamless steel pipe, weight 18.97 lb. per ft. for single swing gates wider than 13-ft. up to and including 18-ft. opening. Also, for double swing gates wider than 26-ft. opening up to and including 36-ft. opening.

8⅝-in. outside diameter seamless steel pipe, weight 24.7 lb. per ft. for single swing gates wider than 18-ft. opening, and for double swing gates wider than 36-ft. opening.



Post Spacing and Setting—Posts are regularly spaced in line of fence 10-ft. center-to-center and set 36-in. deep. In all cases posts are set in *reinforced* concrete footings (1:2:4 mix), crowned to shed water and protect post at ground line. Diameters of footings are 12-in. for terminal posts, 10-in. for line posts where fence is 7-ft. and over and 9-in. for line posts where fence is 6-ft. high.





Bracing—End, gate and corner posts are suitably braced with 1⅝-in. outside diameter horizontal seamless steel pipe braces, weight 2.272 lb. per ft., and adjustable truss brace between terminal post and first line post, complete with all fittings. Swing gate posts furnished with auxiliary side braces where conditions require.

Barbed Wire Arms—Made of malleable iron and pressed steel, latest pattern, adjustable. Heavily hot zinc coated. Arms carry three strands of barbed wire—the top strand at an angle of 45 degrees, 12-in. in or out of the fence line; or the arm may be adjusted to vertical position if desired.

Barbed Wire—Four-point pattern, comprising two strands of 12½ gauge copper-bearing wire, barbs spaced 3-in. apart—all heavily hot zinc coated after fabrication.

Post Tops—Made of heavily hot zinc coated malleable iron, designed to fit over post top to exclude moisture.

Tension Bars—¾x¼-in. tension bars, secured to terminal post with bands. Hot zinc coated.

Brace and Tension Bands—Made of heavy stampings of the latest approved type, hot zinc coated.

Fabric Bands—Aluminum or zinc alloy, self-tying or with buckle for attaching fabric to line posts.

Gates—Frames made of 2-in. outside diameter hot zinc coated copper-bearing seamless steel pipe, weight 2.717 lb. per ft., with necessary intermediate braces of 1⅝-in. outside diameter copper-bearing seamless steel pipe, weight 2.272 lb. per ft.

Gate Filler—All gates to be filled with fabric to match fence line.

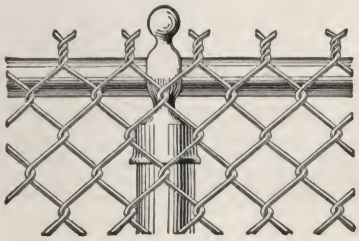
Hinges—Latest type improved heavy duty ball-and-socket design, permitting 180° gate swing, centering gate weight at ground line, eliminating gate sag and preventing turning of hinges on posts.

Latches—Heavy duty plunger-bar clevis type, designed for positive padlock locking.

Pittsburgh Guardian Chain Link Fence

(Standard Heavy Construction)

Standard height, 6-ft. Built in heights from 5 ft. up to and including 12 ft. In all heights chain link fabric is full height of fence.



Construction throughout is the same as Pittsburgh Custodian Chain Link Fence, except that there are no barbed wires or barbed wire extension arms at the top, and in the 5-ft. height of fence the line posts may be set 30-in. deep.

Pittsburgh Chieftain Chain Link Fence



Standard height, 7 ft. Built in heights from 7 ft. up to and including 12 ft. In all heights chain link fabric is 1 ft. less than overall height of fence.

Construction throughout is the same as Pittsburgh Custodian Chain Link Fence, except top finish, which comprises 5 strands of barbed wire and barbed wire extension arms as illustrated here.

Pittsburgh Residential Chain Link Fence

Standard height, 4 ft. Built in heights 3, 3½, and 4 ft. In all heights chain link fabric is full height of fence.

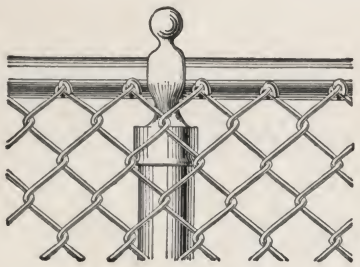
Construction same as Pittsburgh Custodian Chain Link Fence shown on the previous page, omitting barbed wire tops, and with the following exceptions:

Fabric—Pittsburgh Chain Link copper-bearing basic open hearth steel wire, hot galvanized after weaving with heavy zinc coating. Furnished regularly in 2-in. mesh, No. 9 gauge. Also available in No. 6 gauge or No. 11 gauge. Selvage: one edge finished in barbed and twisted, other edge in knuckled finish. Recommended practice is to dress knuckled edge at top of fence just under top rail as illustrated.

Line Posts—2-in. outside diameter seamless steel pipe, copper-bearing, weight 2.717 lb. per ft.

Terminal Posts—End and corner posts 2½-in. outside diameter seamless steel pipe, weight 3.652 lb. per ft.

Gate Posts—2½-in. outside diameter seamless steel pipe, weight 3.652 lb. per ft. No bracing is required because of top rail.



Post Setting — Line posts are set 24-in. and terminal posts 30-in. deep in *reinforced* concrete footings (1:2:4 mix), crowned to shed water and protect post at ground line.

Gates—Residential gate frames are made of 1⅝-in. outside diameter seamless steel pipe, weight 2.272 lb. per ft.

Pittsburgh Chain Link Tennis Court Fence

Heights—8, 10 and 12-ft. in one width of fabric. Heights greater than 12 ft. furnished in two panels.

Fabric—No. 11 gauge, 1¾-in. mesh; selvage knuckled top and bottom.

Posts and Framework—Same as for Custodian Fence.

Gates—Standard Tennis Court Gates are 7-ft. high by 3½-ft. opening (walk); or 10-ft. opening (double drive) with overhead transom. This fence is in every detail, except for the slight difference in mesh and weight of fabric, the equivalent of the Pittsburgh Chain Link Fences previously described.



All Pittsburgh Complete Chain Link Fences are designed and manufactured to meet or exceed the most rigid requirements, including A.S.T.M. specifications.

Miscellaneous Construction

In connection with complete Pittsburgh Chain Link Fences, such items as removable panels for transformer station enclosures; overhead-track slide gates, manually or mechanically operated; baseball backstops and fence end fans are available in standard designs. Special cantilever gates and special construction of all kinds can be supplied on estimate.

Erection Service

An erection service is available everywhere for Pittsburgh Chain Link Fence, either under direction of PITTSBURGH STEEL COMPANY erection superintendents or the thoroughly experienced crews of our distributors. If you prefer to have your own workmen install the fence, an erection superintendent to direct them will be furnished at a reasonable charge.

Diagram, Prices and Information

When writing for information and prices, may we suggest that you send a diagram or layout of the proposed job. If possible, send blue print with correct measurements and specifications.

Note: All weight and dimensions are nominal and are taken from full standard weight schedule adopted by manufacturers.

Other Pittsburgh Chain Link Products

Pittsburgh Chain Link fabric, made throughout to the high Pittsburgh standards of quality, is available in a wide range of gauges, meshes and fabric widths. The popular fabric for tennis court enclosures is our No. 11 gauge, 1¾-in. mesh, made in single panels up to 12 ft. in width. Other fabrics for fur farming fences, window guards, partitions, flexible belting, etc., are available—ranging from the heavy fence fabrics to smaller meshes and light gauges for special purposes.

Other Pittsburgh Products

In addition to the products illustrated and referred to in these pages, PITTSBURGH STEEL COMPANY manufactures under the "Pittsburgh" family name, a number of other related items, some of which are listed here:

Steel and Wire Products—Barbed Wire, Gates, Posts, Fence Fittings, Fence Tools, Staples, Nails (all kinds), Spring Wire, Bright Wire, Annealed Wire, Zinc Coated (galvanized) Wire, Bale Ties.

Seamless Steel Tubular Products—Oil Well Casing, Drill Pipe, Tubing, Line Pipe, Cracking Still Tubes, Boiler Tubes, Power Piping, Refinery Piping, Refrigeration Piping, Coils, Mechanical Tubing.

ESTABLISHED 1886

THE STEWART IRON WORKS COMPANY, INCORPORATED

Ornamental Iron, Iron Picket and Chain Link Wire Fences and Gates

822 Stewart Block, CINCINNATI, OHIO

SALES AND ERECTING SERVICE FROM COAST TO COAST

Products

PLAIN and ORNAMENTAL IRON FENCES and GATES; CHAIN LINK WIRE FENCES and GATES.

Iron Railings, Iron Grilles, Bronze and Iron Lanterns and Lamp Standards, Lawn Furniture, Park Settees, Folding Gates, Window Guards, General Ornamental Iron and Wire Work.

For our page on Jail and Prison Construction, see Manufacturers' Index.

Facilities

This Company, "The World's Greatest Iron Fence Builders," through its 47 years of manufacturing has acquired a fund of experience and knowledge only possible through a lifetime association with the work. The plant occupies 8 acres and has 350,000 sq. ft. of floor space, manned and equipped to produce products on schedule time and at proper prices.

Stewart FENCES



Factory, Covington, Ky.
(Opposite Cincinnati, Ohio)

Design Service

A complete Designing and Drafting Department is available for the preparation of design suggestions—or to co-operate in working out architects' designs. Our book of Designs "C" is available for those who wish to consult its 96 pages of ornamental fence and gate design suggestions.

Standard Designs

We manufacture a range of plain or standard designs of Iron Fences for all purposes. The designs shown herein are those in most general use. A wider selection will be found in our general fence catalogue which will be sent upon request.

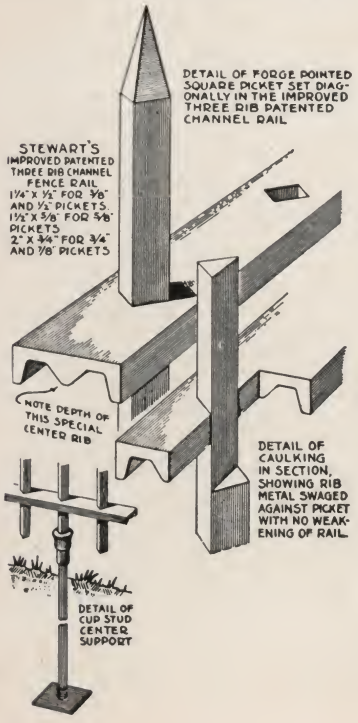
STRUCTURAL DETAILS OF STEWART IRON FENCE AND GATES

Line of Fence Posts—Stewart builds with "I" section posts and, except for the heaviest fences, with an oval face section known as the Stewart Oval-Back I-Beam. These sections offer maximum strength per pound of metal, are open and easily painted sections and need *no* back bracing.

This new and revolutionary improvement in iron fence design, together with the use of the Stewart improved patented 3-ribbed channel rail, establishes Stewart fences in preferred class.

It will be noted from the illustration at the right that when Oval-Back I-Beam construction is specified a slip-over rail connection is used. This connection hides the rail ends, providing lengthwise adjustment as well as expansion and contraction, while the setscrew arrangement allows the connection to be raised or lowered for adjustment.

Post Caps—The standard designs are illustrated. For practical economy, however, posts with pointed (sheared) tops can be used.



Rails—The improved patented 3-ribbed channel rail has been redesigned with deeper flanges and a heavier center rib. Pound for pound this is much more rigid than a commercial channel or flat bar. The center rib affords extra metal at the point of caulking.

Pickets—Pickets are round or square in ⅜, ½, ⅝, ¾ or ⅞-in. sizes, or heavier if required.

Caulked or Welded Pickets—Stewart has adhered to and recommends caulked picket construction for the usual installation because a caulked picket panel can be made to adjust itself to minor variations of grade without loosening the caulked bond between the pickets and the rails. Our caulking is done by methods which work the metal of the rail into the pickets and fasten the latter rigidly and permanently in place. For installations requiring it, however, welded picket construction can be furnished with each picket electrically welded in place.

Center Supports—Adjustable center supports for the panels of iron fence are furnished as part of standard construction. See detail illustration to the left.

Gates—Walk, driveway and special gates may be of a design matching the fence or of ornamental design. Our gates are furnished when specified with Stewart Bronze Interior Locks. Our heavier gates are furnished with bronze bushed socket mounted hinge bars with a special provision for oiling.

Iron and Special Design Work

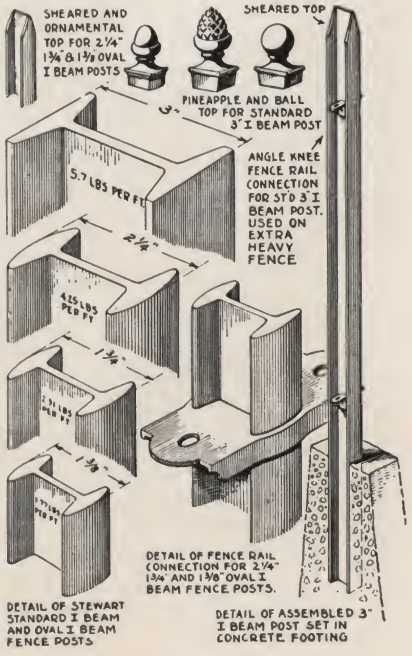
We maintain a special division for the execution of designed ornamental iron fences, gates, balcony railing, grilles, etc. The craftsmanship of this division of Stewart Shops compares with any in the country.

We also offer the services of our staff of designers whose specialization on ornamental iron work has given them a faculty of expressing decorative ideas in forms that can be worked out to practical cost advantage. Blueprints and photographs of typical Stewart work are available.

Details of Stewart Oval-Back I-Beam Posts

As will be noted in the illustration to the right, Stewart Oval-Back I-Beam Fence Posts can be had in three sizes—1⅜ ins. weighing 1.77 lbs. per foot; 1¾ ins. weighing 2.31 lbs. per foot; and 2¼ ins. weighing 4.25 lbs. per foot. Note particularly the weight of each of these sections.

The neat and improved appearance of this fence post, which requires no back brace, is only a secondary feature to its sturdy construction.



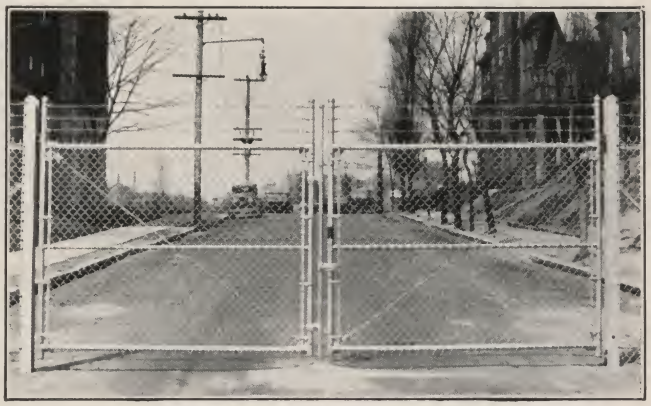
Stewart Chain Link Wire Fences

Made in types and sizes to meet every known requirement for fence.

Complete sales and erection service available through Stewart Fence Engineers throughout the country.



Design 3T-OB Fence with Oval-Back I-Beam Line Posts



Stewart "Heavy Duty" Swing Gate

SPECIFICATION CHART, STEWART CHAIN LINK FENCES

Stewart style	Height, feet-inches	Fabric		Line posts, inches	Top rail, inches	Width gates, feet-inches		End, corner and gate posts, inches	Barbed wire
		Mesh, inches	Gauge wire			Single	Double		
Good Will	3-9	1½	12	1⅜ oval back	1⅛ o.d. pipe	3-6	8-6 10-0	1¾ oval back	None
L. F.	3-0 3-6 4-0	2	9 or 11	2 o.d. pipe	1⅜ o.d. pipe	3 to 6 ft.	6 to 12 ft.	2½ o.d. pipe	None
OTM	4-0 5-0 6-0	2	9 or 6	1¾ oval back or 2 o.d. pipe	1¾ oval back or 1⅝ o.d. pipe	To order	To order	End and corner posts, 2¼ oval back or 2½ pipe; gate posts 2¼ to 4	None
OTH	5 to 12 ft.	2	9 or 6	2¼ oval back or 2½ o.d. pipe	1¾ oval back or 1⅝ o.d. pipe	To order	To order	End and corner posts, 3; gate posts, 3 to 8⅝	None
3T	6 to 12 ft.	2	9 or 6	2¼ oval back or 2½ o.d. pipe	1¾ oval back or 1⅝ o.d. pipe	To order	To order	End and corner posts, 3; gate posts, 3 to 8⅝	3 strands
5T	7 to 12 ft.	2	9 or 6	2¼ oval back or 2½ o.d. pipe	1¾ oval back or 1⅝ o.d. pipe	To order	To order	End and corner posts, 3; gate posts, 3 to 8⅝	5 strands
Tennis Court (middle rail furnished in 12-ft. height)	8, 10 and 12 ft.	1¾ or 2	11 or 9	2¼ oval back or 2½ o.d. pipe	1¾ oval back or 1⅝ o.d. pipe	To order	To order	End and corner posts, 3; gate posts, 3	None

Exclusive Structural Features of Stewart Chain Link Fence

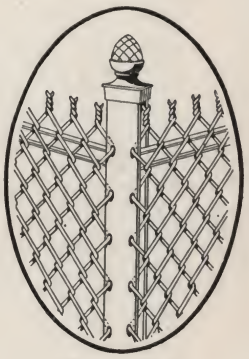


Oval-Back I-Beam Post

The Oval-back I-beam line post with integral arm construction is an exclusive Stewart feature. It is the heaviest and strongest fence section in standard use. The same oval-back section, in a smaller size, is used for a top rail where specified.

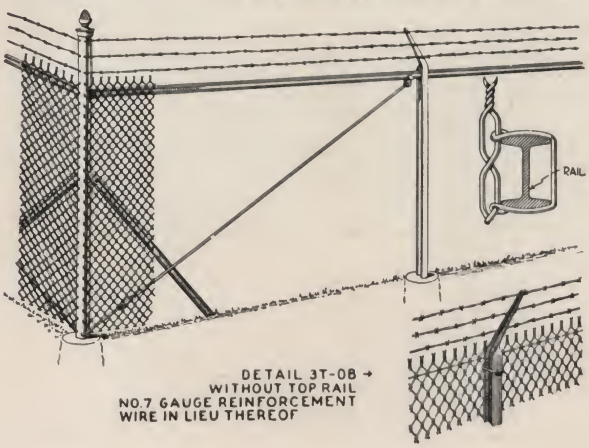
Through the use of open section fence members, Stewart makes internal moisture accumulation impossible.

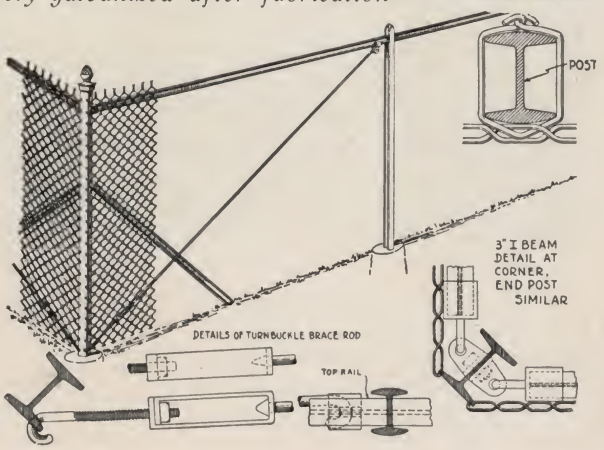
Stewart uses a 3-in. I-beam for corner post construction—the flanges of the post are slotted to accommodate the fabric which passes through each successive slot in "cork screw" fashion. Such construction eliminates the need for bolts, end bands, tension bars, etc., which are often first to show signs of rust. Stewart Fence approaches to the ideal—a boltless fence.



Corner Post Construction

Stewart Chain Link Fence is completely galvanized after fabrication







ESSENTIAL SPECIFICATION DATA

1. Height of fence when set.
2. Size and kind of pickets.
   Refer to paragraph 4 under Structural Details.
   - A—Square or round.
   - B—Set square or diagonal.
   - C—Top finish.
   - D—Center to center spacing.
3. Size of rails.
4. Caulked or welded assembly.
5. Size and kind of posts.
6. Gates.
   - A—Width of opening.
   - B—Design detail.
   - C—Type of gate posts.
7. Plan and profile detail to
   - A—Determine panel length and post spacing.
   - B—Detail grades.
   - C—Show special items.

WICKWIRE SPENCER STEEL COMPANY

Manufacturers of Chain Link, Wire and Iron Fences and Gates

GENERAL OFFICES
41 East 42nd Street
NEW YORK, N. Y.

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SEATTLE, WASH., 1025 Sixth Avenue, So.
PORTLAND, ORE., 361 14th Street, No.

Products

CHAIN LINK FENCES and GATES.
Also Ornamental Iron Fences and Gates.
For our pages on Electrically Welded Wire Fabric for concrete reinforcement, Woven Wire Lath, and Metal Grilles, see Manufacturers' Index.

Advisory and Erection Service, Estimates, etc.

Engineers, architects and contractors are invited to write our service department for any assistance in helping to solve their fence problems. We will be glad to furnish estimates in accordance with all standard specifications, engineer's or architect's designs or any special design. Complete fence catalogue and specifications for standard designs will be gladly mailed on request.

Chain Link Wire Fences

The pioneer chain link wire fence, hot galvanized after weaving, woven from special drawn wire of extra high tensile strength. Framework made from standard full weight copper bearing galvanized steel pipe.

Specifications—

Types—300, 310 and 320.

Heights—Type 300—3, 3½, 4, 5 and 6 ft.; Type 310—3, 3½ and 4 ft.; Type 320—3, 3½, 4, 5 and 6 ft.

Fabric—Woven in 2-in. mesh of No. 9 or No. 6 (W&M) gauge special drawn copper bearing steel wire, heavily hot galvanized after weaving. Both selvages of fabric on fencing 5 ft. and higher, barbed finish. Fabric 4 ft. or less in height, one edge barbed finish and the other edge knuckled.

Line Posts—2-in. outside diameter pipe, weight 2.72 lb. per lineal ft. (For spacing 10 ft. apart.)

Top Rail—Type 300* none; Type 310 1⅜-in. outside diameter, weight 1.68 lb. per lineal ft.; Type 320 1⅝-in. outside diameter, weight 2.27 lb. per lineal ft.

End Posts—2½-in. outside diameter, weight 3.65 lb. per lineal ft.

Corner Posts—2½-in. outside diameter, weight 3.65 lb. per lineal ft.

Gate Posts—2½-in. outside diameter, weight 3.65 lb. per lineal ft.

Brace—Type 300* 1⅜-in. outside diameter, weight 1.68 lb. per lineal foot; Type 310 none; Type 320 1⅝-in. outside diameter, weight 2.27 lb. per lineal ft., on 5 and 6-ft. fence only.

Gates—Constructed of 1⅝-in. outside diameter welded pipe frames and so designed to give continued service under heavy duty, filled with fabric to match fence, strongly braced and equipped with strong fittings and ornamental scroll when specified. All parts heavily hot galvanized.



Friendly Fence—45 In. High Only

Type 310—

Fabric—Woven in 1½-in. mesh of No. 12 gauge (W&M) special drawn copper bearing steel wire, heavily hot galvanized after weaving.

Frame—Constructed throughout from full weight copper bearing steel pipe.

Line Posts—1⅝-in. outside diameter, weight 2.27 lb. per lineal ft.

Top Rail—1⅜-in. outside diameter, weight 1.68 lb. per lineal ft.

End, Corner and Gate Posts—2-in. outside diameter, weight 2.72 lb. per lineal ft.

Gates—Constructed of 1⅛-in. outside diameter pipe frame, filled with fabric to match fence and equipped with ornamental scroll on top. All parts heavily hot galvanized.

Type 210—

Same specifications as 310, excepting that 1⅝-in. outside diameter line posts are used in place of 2-in. End, corner and gate posts, also gate same as 310.

Other Types

We are prepared to furnish all types of industrial and institutional fences, as well as tennis court enclosures, and backstops, and will be glad to forward complete specifications on request.

*On Type 300 Friendly Fence (no top rail) a No. 7 gage heavily galvanized coiled spring tension wire is furnished in place of top rail.

AMERICAN FENCE CONSTRUCTION CO.

TELEPHONE
MUrray Hill 2-4470

S. W. Corner Fifth Avenue and 44th Street
NEW YORK, N. Y.

REPRESENTATIVES IN PRINCIPAL CITIES

For Our pages on Fences of Wrought Iron and Chain Link Wire, see Manufacturers' Index

AFCO RUSTIC CEDAR FENCES

Afco cedar fences are hand craft products. Nothing but the best materials and the best standards of workmanship are permitted in their manufacture. None but skilled craftsmen are employed in any of the operations or processes involved which make Afco Fences so well known for their artistic quality.

All Afco cedar fences are made of "winter cut" northern white cedar. Winter cut material has less sap, holds bark better and is more durable. Northern white cedar resists insect attacks and is well known for its great permanence for uses above and below ground and in contact with water.

Appropriately selected for type and location Afco fences become a mark of distinction as well as a protection to property.

We urge all interested to visit our showrooms at our New York office where examples of Afco Rustic Fences, rustic garden furniture and other rustic wood products are on exhibition.

Afco Picket Fences



Plate No. 619—Scalloped Top Natural Tight Picket Fence



Plate No. 612—Inside Panel Detail Showing Full Round Framework Member

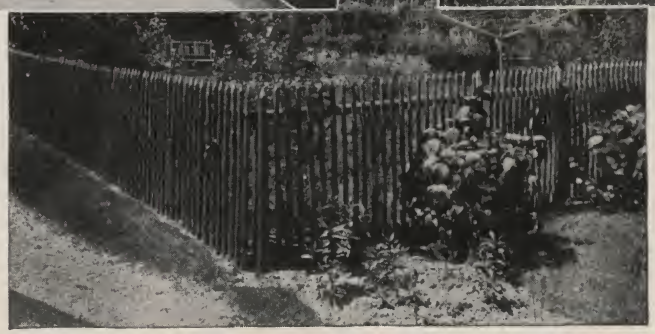


Plate No. 611—Natural Open Picket Fence, 4 Ft. High

Afco Picket Fences include all those shown on this page and one on the upper right hand on the following page. As shown, these fences are made in certain variations. Pickets may be round or half round, "natural" (with bark), or "peeled" (without bark), and they may be set "tight" or "open."

The posts and rails for all picket fences are "natural" or "peeled" to match the pickets used and all are full round except that for tight half round pickets the rails only, have one sawed face to receive the pickets.

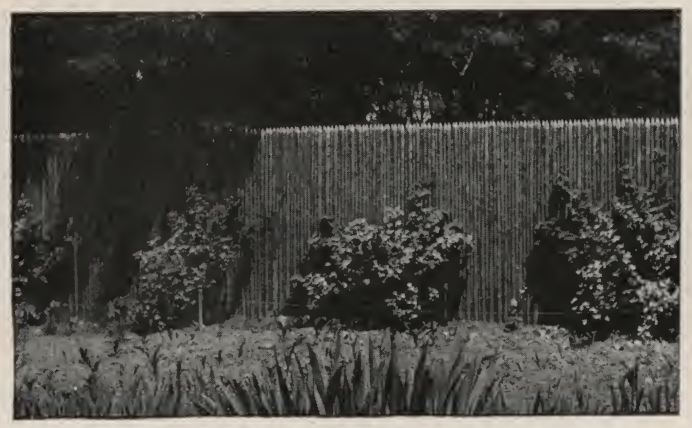


Plate No. 617—Natural Tight Picket Fence, 6 Ft. 4 In. High



Plate No. 650—Peeled Tight Picket Fence, 6 Ft. 4 In. High

All posts are approximately 4 in. in diameter, varying with the natural taper of the log.

Rails vary between 2½ and 3 in. in diameter. Two rails are provided for fences 3 ft., 4 ft. and 5 ft. high, three for those 6 ft. 4 in., and four for those 8 ft. high.

Tight picket fences with full or half round pickets are made in 5 ft., 6 ft. 4 in., and 8 ft. heights. Edges of half round pickets are never cut.

Open picket fences are made in 3 and 4-ft. heights with pickets spaced either 1 in. or 2 in. apart. Round pickets for all of these fences are about 1¼ in. in diameter. Half-round pickets are about 2¼ in. All pickets are double nailed to rails with old-time cut iron nails.

All picket fencing is assembled and shipped in sections 8 ft. long.

Gates are made to match fences and in appropriate stock designs. Hardware is of rustproof wrought iron. Artistic hand hammered hinge designs are available in stock patterns, also rustic effects in locks and latches. Special gates will be made to order.



Plate 651—Type M.S.B. Open Picket Fence

AFCO CEDARSTRONG FENCE

This fence while similar in general appearance to Afco Tight Picket Fences differs in size of pickets and methods of assembling and erecting. It is intended to closely resemble those rustic fences found in rural districts of France and England where the palings are secured by means of intertwined wire. In Cedarstrong fences modern methods are used to make them stronger and easier to erect.

All palings are peeled cedar, sawed half round, average 1¾-in. wide and set "tight." Palings are fastened to waney edged backing strips which interlock when the sections are erected. Copper coated nails are used which are clinched through the backing strips.



Posts are peeled and are 4 in. in diameter. They are set 8 ft. on centers.

Rails are 3 in. minimum diameter, peeled with one sawed face or they may be 2x4 sawed square edge. Top and bottom rails only are provided.

Erecting this fence is simplicity itself. After posts and rails are set the panels are slipped into position and nailed to the rails through drilled holes at top and bottom of each panel unit.

Afco Post and Rail Fence

Afco Post and Rail Fence may be had with rails of either full round white cedar which is splinter-free or of split chestnut. Rails average 4 to 5 in. thick. The ends are hewn flat and overlap 6 in. in the posts. Posts have a minimum top diameter of 6 in. and are set 12 ft. on centers. This fence is furnished 4 ft. high only with either 3 or 4 rails as may be specified. It is shipped knocked down.

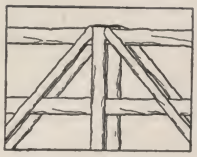


Plate 652—Post and Rail Fence with Round Cedar Rails

Afco Hurdle Fence

Three innovations have been introduced into the construction of Afco Quality Hurdles. Full round bars of northern cedar, in place of split rails. Heavy braces on *both* sides. Posts full 7 ft. long creosoted for permanent setting. Such great strength is obtained with this construction that the panel length has been increased to 10 ft. 6 in. from the commonly used 8 ft. 3 in. standard. The standard hurdle is made with 5 bars 4 ft. high when set; for shipment either knocked down or assembled. Single gates 5 ft. or double gates 10 ft. wide can be furnished.





Detail of Double Braces

ANCHOR POST FENCE COMPANY

Eastern Avenue and Kane Street, BALTIMORE, MD.

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CINCINNATI, OHIO, 507 St. Paul Building
DETROIT, MICH., 508 Architects Building
HARTFORD, CONN., 43 Farmington Avenue
HOUSTON, TEX., 2301 Commerce Street
LOS ANGELES, CAL., 616 So. Anderson Street
MINEOLA, L. I., N. Y., 167 Jericho Turnpike
NEWARK, N. J., 1060 Broad Street
PHILADELPHIA, PA., Broad Street and Allegheny Avenue
PITTSBURGH, PA., 541 Wood Street
ST. LOUIS, MO., 1643 Syndicate Trust Building
SHREVEPORT, LA., 3306 Line Avenue
WASHINGTON, D. C., 615 Colorado Building
WILMINGTON, DEL., 1609 Pennsylvania Avenue

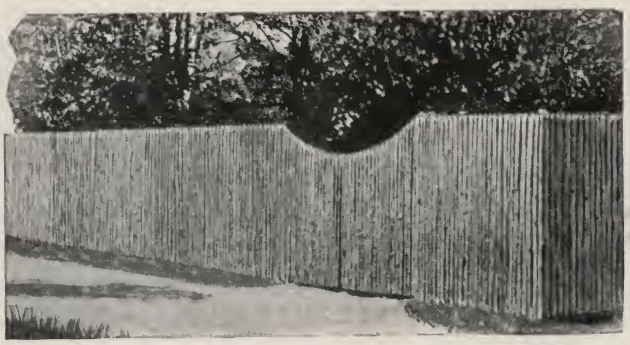
SALES AGENTS IN OTHER PRINCIPAL CITIES—CONSULT TELEPHONE DIRECTORY

For Our Pages on Chain Link and Ornamental Iron Fences, see Manufacturers' Index

General Information

Anchor Cedar Fences are constructed from Northern white cedar. As mentioned under the illustrations below some types have the bark on and others are peeled. In the case of the latter type, exposure to the elements causes it to take on a mellow neutral tone. Pickets are fastened to rails with rust-resisting copperized nails.

Hardware—Is old-fashioned wrought iron. Gate fastenings are wrought iron or wood bolt type to match the gate itself. Hardware harmonizes perfectly with the rustic appearance of the wood.



Anchor Natural Tight Picket Fence, Type NTF

Solid round pickets with the bark left on. Pickets are about 1⅛ inches minimum diameter. Comes in sections 8 ft. long, complete with posts, ready to erect in following heights: 3 ft., 4 in.; 5 ft.; 6 ft. 4 in.; and 8 ft. Gates with straight or scalloped (illustrated) tops in widths 4 ft. for walks and 10 ft. for driveways. Complete with necessary hardware.



Anchor Open Picket Fence, Type PF

Sawed half-round pickets 2 to 2⅜ in. wide at top, nailed to top and bottom cedar rails in such a way as to cause both the half-round surfaces to face outward. For 3 and 4 ft. heights we recommend 2-in. spacing between pickets; for 5 ft., and 6 ft. 4 in. heights, 1-in. spacing. In 8-ft. sections, complete with posts. Can be had in round peeled material only. Walk gates, to match, measure 4 ft. in width. For driveways we supply two 5-ft. gates to care for 10-ft. opening. Complete with hardware.



Anchor Farm Rail Fence, Type FRF

Solid round posts and rails with the bark removed. Rails have tenoned ends to fit bored holes in posts, but with sufficient leeway to follow ordinary ground contours. Rails are 13 ft. long, approximate minimum diameter 3 in. Posts are 7 ft. long and 5 in. top diameter. Can be secured with 2, 3, 4, or 5 rails. Gates are single and come 4 ft. and 10 ft. wide. Shipped knocked down ready for assembly on job.



Anchor Quality Hurdle Fence, Type QHF

Rails are made of full round peeled cedar poles of approximately 2 in. diameter at the small end. Posts are 7 ft. long and 3 in. minimum diameter at top. Sections have five rails; are 10 ft. 4 in. in length. Gates are single and come 4 ft. and 10 ft. in width. Complete with hardware.

DUBOIS FENCE & GARDEN CO., INC.

Manufacturers of Woven Wood Fence

101 Park Avenue
NEW YORK, N. Y.

THE ORIGINAL WOVEN WOOD FENCE

Made in France of Seasoned French Chestnut

Dubois Woven Wood Fence Blends Perfectly with Any Period or Design

DUBOIS
(TRADE-MARK REG. U. S. PAT. OFF.)

The fact that the foremost architects and landscape artists of this country are using *Dubois* as part of their landscaping schemes is conclusive evidence of its remarkable utility and practical features.

It is being used in a multitude of ways:

To enclose an estate or garden.

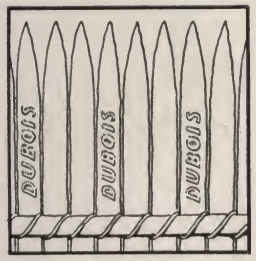
To screen a laundry or service yard.

To provide a harmonious background for flowers and shrubs.

To bring safety and charm to city roof gardens and pent house terraces.

To shut out unwelcome views.

Its installation on golf courses is constantly increasing and it is extensively used as an enclosure for tennis courts, playgrounds, swimming pools and in many other ways.



Genuine Dubois Is Branded on the Back of Every Section for Your Protection

To architects, *Dubois* presents a completely satisfactory answer to their problem of how to achieve privacy for an estate or garden without the sacrifice of beauty or architectural harmony, for *Dubois* has a charm that is unique in character and blends with any style or period of architecture.

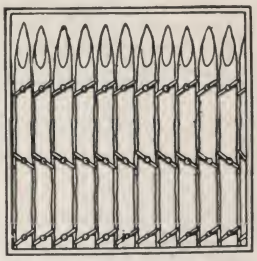
Provides Immediate Privacy

One of the principal advantages of specifying *Dubois* to complete the ensemble of house and grounds is that it gives privacy *immediately.* There is no bare and ugly period of waiting for plantings to grow and, unlike a hedge, *Dubois* never needs attention once erected.

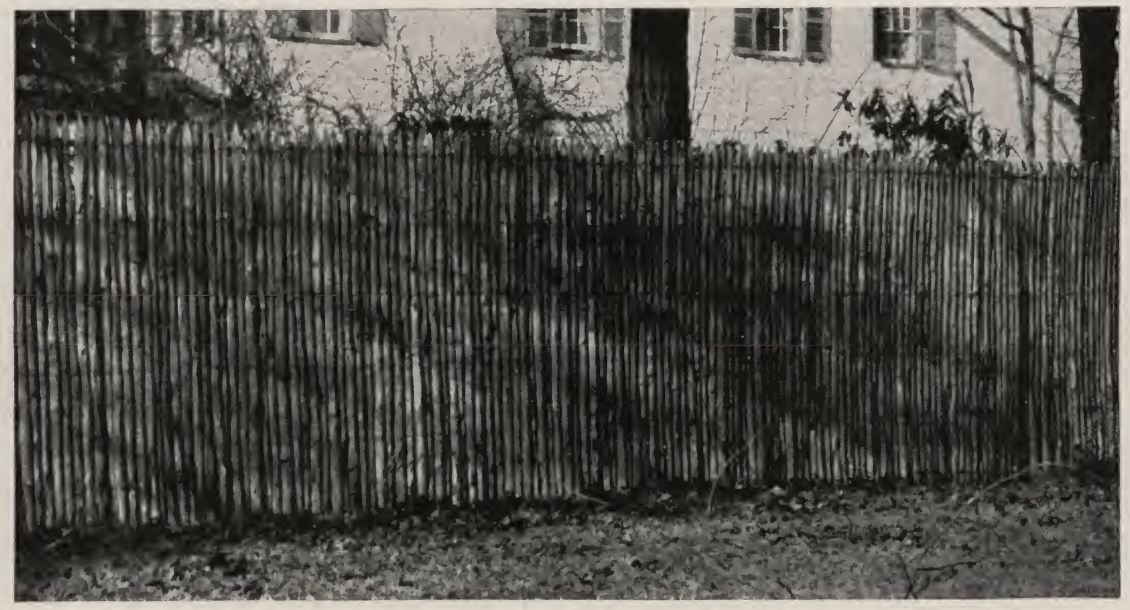
Dubois Is Made in France

"Woven wood" fences have been made by French craftsmen and used with telling artistry on the continent for centuries, but not until the advent of *Dubois* were these richly decorative rustic chestnut fences introduced to home lovers throughout the United States. Still made by hand, with typical French thoroughness, the strict specifications laid down for the manufacture of *Dubois* assure much better quality, uniformity and length of life than when the choice of materials and excellence of workmanship depended upon the skill and conscientiousness of the small maker.

To obtain *Dubois* quality and *Dubois* dependability, it is therefore important that you clearly specify *Dubois* by name. The registered trade-mark "DUBOIS" is branded on the back of every section. Thus you will be assured of genuine *Dubois.*

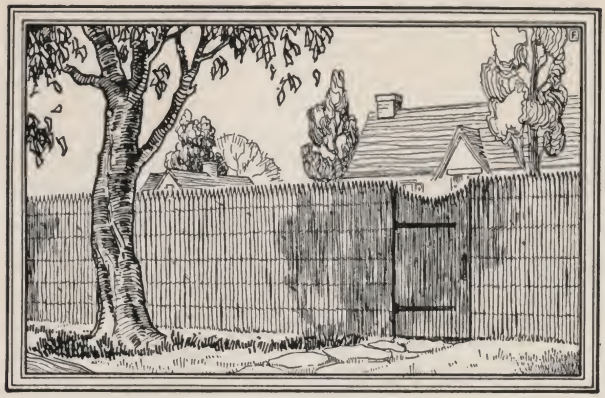


Heavy, Rustproof Coppered Wire Is Used Exclusively to Bind the Saplings



The First Recorded Installation of Dubois Woven Wood Fence, Erected in 1901

This fence is as beautiful and charming today as the day it was erected. *Dubois* Woven Wood Fence never needs painting. The first cost is moderate and as the years pass, it becomes an even more thrifty investment for it is absolutely free from maintenance cost

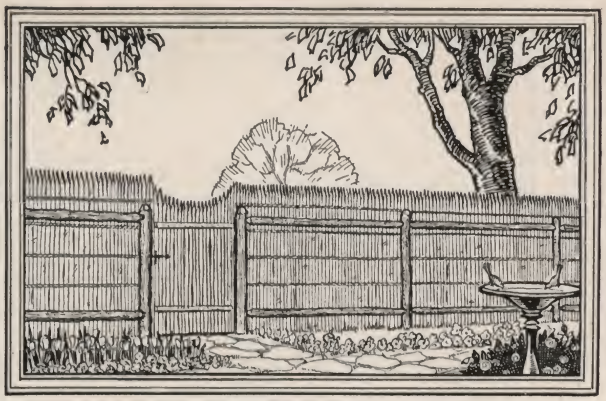


From the Outside

Dubois presents an even façade of sturdy saplings, uniformly straight and so closely woven that outsiders cannot see through



The posts are placed about 8 ft. apart and connected top and bottom with 2x4 in. timbers or other cross-rails. Then the sections of *Dubois* are nailed to this framework—an easy job for anyone.



From the Inside

The ready-cut rustic framework harmonizes perfectly with *Dubois*, making the inside effect as attractive as from without



Single or Double Gates Are Furnished with Curved or Straight Tops

Gives a Lifetime of Service

Before use the live-cut *Dubois* chestnut saplings are thoroughly seasoned and heat treated by a special baking process to prevent all possibility of warping.

Dubois uses coppered *rustproof* wire to bind the pickets securely to their backing strips. Being rustproof and weatherproof, *Dubois* never needs painting. Its first cost is moderate and, as years pass, it becomes an even more thrifty investment for it is absolutely free from upkeep cost. *The first cost is the last.*

A Height for Every Purpose

Dubois is imported from France ready to erect in convenient sections 5 ft. long.

Six Heights—*Dubois* comes in six heights: 18 in.; 3 ft. 10 in.; 4 ft. 11 in.; 6 ft. 6 in.; 8 ft.; and 10 ft.

Gates to match can be furnished equipped with quaint iron hinges and latches. These gates come in both single and double sizes (for driveways), with straight or curved tops and give a most artistic effect.





Dubois Rustic Post
The cross-rails fit into the posts easily and are held securely

Dubois Is Easily Erected

Dubois is shipped in 5-ft. sections, and is easily handled. These sections are readily erected. No skilled labor is required. Only a framework of posts and cross-pieces is needed which can be procured from any carpenter or lumber dealer.

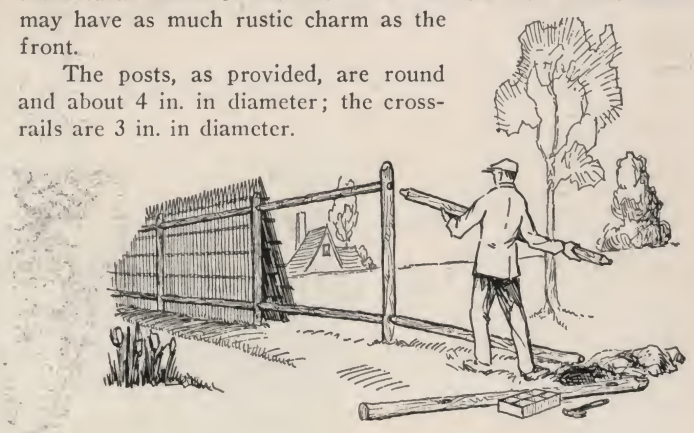
The posts are set approximately 8 ft. apart and should be connected by two crosspieces, to which the sections of *Dubois* are nailed. Locust or cedar is recommended for the posts.

Rustic Framework—Ready to Erect

For those who prefer, we now supply an attractive rustic cedar framework, designed especially as a support for *Dubois*. This consists of mortised and tenoned posts and cross-rails, finished to harmonize with the quaint, rustic aspect of *Dubois*. To erect this, no labor is required beyond the setting of the posts and the fitting together of the ready-cut parts.

In addition to its added convenience, this framework is desirable as well because it is so thoroughly in harmony with the natural charm of *Dubois*. Now the rear side of the fence may have as much rustic charm as the front.

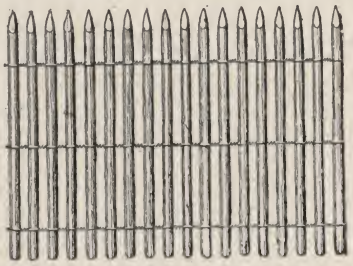
The posts, as provided, are round and about 4 in. in diameter; the cross-rails are 3 in. in diameter.



DUBOIS CLEFT CHESTNUT FENCE

A Beautiful and Economical Fence

In many respects, *Dubois* Cleft Chestnut Fence is the equivalent of the famous *Dubois* Woven Wood Fence for it supplies the same note of charm and rustic beauty given by the latter. It is made in France of live chestnut saplings, thoroughly processed to prevent warping and consequently will give just as remarkably long service as the Woven Wood Fence.



Section of Cleft Chestnut Fence
Showing spacing between the saplings

The chief difference between these two fences is that *Dubois* Cleft Chestnut Fence is made by machinery with the saplings *spaced one inch apart,* while in the other type they are closely woven together by hand.

Dubois Cleft Chestnut Fence is furnished with the saplings bound with coppered or galvanized wire.

Dubois Cleft Chestnut Fence is ideal for use where a fence somewhat lower in cost than *Dubois* Woven Wood Fence is desired and where absolute privacy is not a consideration.

Suitable for Many Purposes

This versatile fence may be used in a multitude of ways:

To screen a driveway or service yard.

To mark a property line.

To enclose tennis courts.

To give a delightful, rustic atmosphere to a garden.

To serve as a background for vines, flowering shrubs, a trellis for climbing roses, and many similar interesting and beautiful applications.

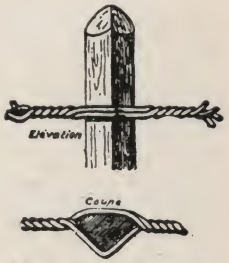
Sizes Available

Dubois Cleft Chestnut Fence is furnished in 16 ft. rolls and in three heights: 6 ft. 6 in.; 4 ft. 11 in.; and 3 ft. 10 in.

Gates, either single or double driveway types, are furnished in corresponding heights.

Installation

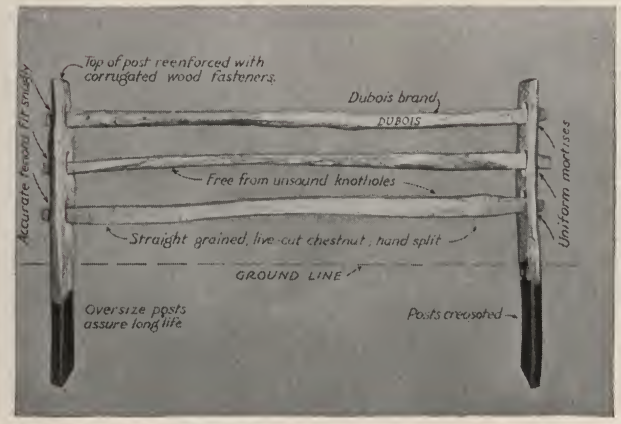
Dubois Cleft Chestnut Fence is easy to erect against stringers between cedar or locust posts placed about 8 ft. apart.



Method of Binding

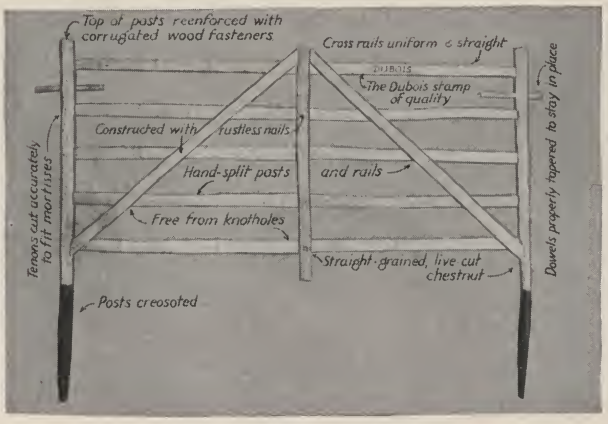
DUBOIS POST AND RAIL AND HURDLE FENCES

Made of Live, Hand Split Chestnut



Dubois Post and Rail Fence

Sections are 10 ft. long. Stand 4 ft. high when set in the ground. Furnished with 3 or 4 bars (same height). Posts are 6 ft. 10 in. long



Dubois Hurdle Fence

Sections are 8 ft. 3 in. long. Stand 4 ft. high when set in the ground. Furnished with 4 or 5 bars (same height). Posts are 6 ft. long allowing 2 ft. underground for good support

JOHN C. RUNKLE, President

TELEPHONE
Porter 5100

THE ELHIDE COMPANY

Makers of Elhide Hand Split Cedar Fencing

CAMBRIDGE, MASS.

PLANTS: HATZIC, B. C.; CAMBRIDGE, MASS.

NEW YORK OFFICE: 20 E. 41st St.—Tel. LEx. 2-6910

Products

ELHIDE HAND-SPLIT RUSTIC FENCING.

For Elhide Hand-Split Cedar Shingles and Elhide Roofing Slate, see Manufacturers' Index.

Elhide Hand-Split Rustic Fencing

Realizing that just as different colors are required in paints, so different colors in fencing are desirable for landscape compositions, THE ELHIDE COMPANY has designed three fencings with different natural color effects. Each distinctive Elhide type of woven fencing has its particular place in architectural and landscape planning.



Elhide Fencing Enclosing Flower Garden—Flat Pickets, Close Style

Elhide Hand-Split Red Cedar Fencing

Elhide Hand-Split Red Cedar Fencing, while suited for almost any color combination, is particularly fitting for estates of the more or less formal types, with brick or stucco houses, also in combination with brick walls, etc. It is without doubt the most durable woven wooden fencing made. The pickets, split by hand from the heart wood of big British Columbia Red Cedar, a wood recognized as one of the most lasting for outdoor use, are woven with copperweld wire, making a fencing that needs no painting (yet can be stained any shade desired) and consequently one that has no upkeep expense. There is no bark on the pickets and the natural split grain surface of the cedar is most attractive. If left untreated, the surface weathers into soft shades and tints which harmonize beautifully with surrounding flowers, shrubbery and landscape. This fencing has the unusual quality of continuing to improve in appearance with age.

There are two styles of pickets, flat and three-cornered, woven either openly spaced or closely together with the special Elhide lock-weave, and without any cross slats, which makes even the closely woven fencing flexible, for bending around trees, posts, corners, etc. The fencing is made in three heights, 3 ft. 10 in., 4 ft. 11 in. and 6 ft. 6 in., and is shipped in rolls containing 8 running feet per roll. It is light in weight and easy to erect. Gates can be furnished, made to match the fencing.

PRICES PER RUNNING FOOT—RED CEDAR HAND-SPLIT FENCING

Close Fencing				Open Fencing (Approx. 2-in. Openings)	
Height		Prices per ft.		Prices per ft.	
ft.	ins.	Flat pickets	Three-cornered pickets	Flat pickets	Three-cornered pickets
3	10	$1.15	$0.95	$0.60	$0.55
4	11	1.35	1.15	.75	.70
6	6	1.65	1.45	1.00	.95

Elhide Cedar Sapling Fencing

Elhide Cedar Sapling Fencing is particularly adapted for estates of less formal type where landscaping is left as natural as possible and especially with houses that have shingled sidewalls of natural or darker shades. The bark is left on pickets, which may be had in either round or half saplings as desired, and their natural roughness with the dark, rich color of the bark is very decorative bordering the garden or estate. These rough rustic pickets have a charm all their own and make a very desirable fence. This fencing, like our other fencings, is woven with copperweld wire, a non-rusting wire, combining the strength of steel and the durability of copper. Like other Elhide types of fencing, it is woven with no cross slats and is therefore flexible and can be bent around trees, posts, etc., and distorted within reason to fit inclined ground with pickets remaining plumb. Made in three different heights, 3 ft. 10 in., 4 ft. 11 in. and 6 ft. 6 in., and put up in rolls containing 8 running feet each. Gates can be furnished to match.



Elhide Woven Round Cedar Sapling Fencing

PRICES PER RUNNING FOOT—CEDAR SAPLING FENCING

Height		Prices per ft.
ft.	ins.	
3	10	$0.85
4	11	1.00
6	6	1.25

Elhide Hand-Split Ash Sapling Fencing

Elhide Hand-Split Ash Fencing is a split ash sapling picket fencing with the bark left on one side of each picket, but with every other picket reversed in the fabric as the fencing is woven. This makes a fencing which is exactly alike on both sides. The clean ash wood quickly weathers to harmonize with the soft gray of the ash bark, giving a most beautiful silvery gray appearance to the fencing, which is particularly pleasing with the white colonial type of house with its wistaria vines and lilac bushes. The pickets are slim and graceful, yet strong and elastic, and woven with copperweld wire as woven with our special lock-weave, make a very strong fencing. The pickets are so tied in position that they cannot spring out of place, but having no cross slats the fencing is flexible and easy to install. It is made in only the closely woven type, in the three heights, 3 ft. 10 in., 4 ft. 11 in. and 6 ft. 6 in., and is put up in rolls containing 8 running feet. Gates can be furnished to match.



Elhide Hand-Split Ash Sapling Fencing

PRICES PER RUNNING FOOT—ASH HAND-SPLIT FENCING

Height		Prices per ft.
ft.	ins.	
3	10	$0.95
4	11	1.15
6	6	1.45

Full information on all types of Elhide Fencing with pictures of installations will be cheerfully furnished on request

ROBERT C. REEVES CO.

Manufacturers and Importers of Wooden Fences

101 Park Avenue, NEW YORK, N. Y.

REEVESHIRE* FENCES, LITERATURE AND ESTIMATES

Reeveshire
"The Name of Famous Fences"

FRENCH PROVINCIAL* WOVEN WOOD FENCE—a sturdily constructed fence of live chestnut saplings, woven together with copper welded rustproof wire.

CLOSE CLEFT CHESTNUT FENCE—somewhat similar to French Provincial* but with saplings spaced about ¼ in. apart.

CLEFT CHESTNUT FENCE—same as above with saplings spaced about ¾ in. apart.

ENGLISH TYPE HURDLE FENCE and GATES.

OLD-FASHIONED POST and RAIL FENCE.

We have prepared interesting pamphlets and booklets dealing with the application and installation of Reeveshire* Fences. These will be sent on request.

Estimates gladly furnished on receipt of specifications.

REEVESHIRE* WOVEN WOOD FENCES

French Provincial* Fence

A charming and practical woven wood fence. The grace of the slender palings and its rustic simplicity blend into any background. Age only mellows its beauty and it is an attractive frame for any enclosure. It affords privacy and protection while presenting an extremely pleasing appearance to the outside world.

Sturdy and Economical—The practicability of the French Provincial* Woven Wood Fence lies in the sturdiness of its construction. The live chestnut saplings are grown, cut and assembled in the provinces of France, and are woven together with rust-resisting copper welded wire. Rigidity is provided by a firm stripping which is attached to the back. Its economy lies in the fact that the hand-split saplings never need painting.

How Furnished—Supplied in panels in full 5-ft. lengths and in six heights: 10 ft., 8 ft., 6 ft. 6 in., 4 ft. 11 in., 3 ft. 10 in. and 18 in.

Gates are furnished complete with hardware.



French Provincial* Fence



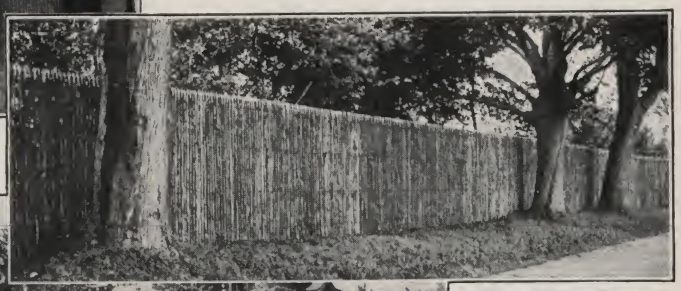
French Provincial* Gate

Close Cleft Chestnut and Cleft Chestnut Fences

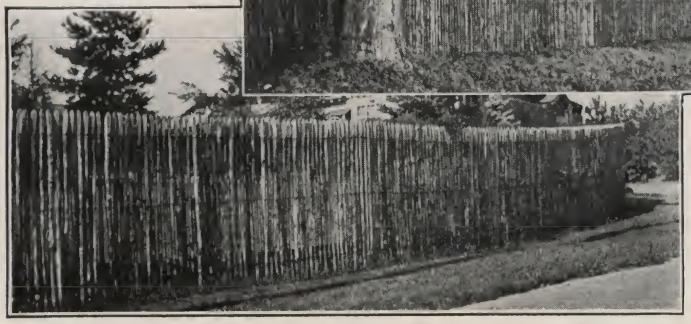
Close Cleft Chestnut Fence—Same in every particular to Cleft Chestnut except that the saplings are spaced about ¼ in. apart.

Cleft Chestnut Fence—Somewhat similar in construction and design to the French Provincial* with the exception that the saplings are spaced about ¾-in. apart and that this type of fence is furnished in rolls instead of in sections. It is somewhat lower in cost than French Provincial* and adaptable wherever absolute privacy is not essential.

How Furnished—Both fences are supplied in 16-ft. rolls, in five heights: 10 ft., 8 ft., 6 ft. 6 in., 4 ft. 11 in. and 3 ft. 10 in. and fastened with copper welded wire.



Close Cleft Chestnut Fence



Left: Cleft Chestnut Fence

REEVESHIRE* HURDLE FENCES AND POST AND RAIL FENCES

English Type Hurdle Fence



Hurdle Fence

Ideal as a division fence in the suburbs, as a boundary fence for large estates, and for enclosing pastures, paddocks, etc. Made of split chestnut in 8 ft. 3 in. sections, 6 ft. posts (heavily creosoted) extend 18-in. into the ground—a galvanized steel staple in top of each post prevents splitting. Fence is 4 ft. high when erected. Wooden pins supplied for fastening sections together. Made in three types—4, 5 and 6-bar.

Gates—Made with 4, 5 and 6 bars to match three types of fencing. Stocked in 8-ft. lengths with extra braces; special lengths to order.

Note: Gates to match Reeveshire* Hurdle Fence as well as Post and Rail Fence can be furnished in regular pattern or with the famous Hitchcock Automatic Opener.

Old Fashioned Post and Rail Fence

Economical and practical for pastures and many other purposes. This is the ideal fence for paneling hunting country.

Made by hand of live split chestnut. Heavy posts 7 ft. long (thoroughly creosoted), with galvanized s-iron in the top of each post to prevent splitting.

The sturdy rails are 11 ft. long.

This style of fence is furnished in 3 or 4-rail types both of which are 4 ft. high when erected. Each panel is 10 ft. in length.

Suitable gates or barways furnished.



Old Fashioned Post and Rail Fence

*Trade-mark registered U. S. Patent Office.

ESTABLISHED 1917

RUSTICRAFT FENCE CO.

(FORMERLY TRADING AS SAMUEL H. TENDLER)

Manufacturers and Importers of Hand-Hewn Wooden Fences

MALVERN, PA.

RUSTICRAFT

Hand-Hewn Fences

For Every Fencing Need

Types of Fences

Imported Woven French Picket—Made in France from seasoned chestnut saplings, hand split with picket tops, and woven closely together with heavy twisted copper wire. Practically indestructible and will last for many years without paint or attention of any kind. Heights: 4, 5, 6½, 8 and 10 ft., erected with cedar framework.

"Cleft" French Picket—Same as woven French picket, except that pickets are spaced at about ¾ in. intervals, woven with heavy copper wire. Heights: 5 and 6½ ft.

Standard English Hurdle—Made from seasoned, hand split chestnut timber in unique Rusticraft style. All nails are galvanized and chestnut posts are treated with wood preservative. Panels are 8 ft. 3 in. long, either 4 or 5-rail style.

De Luxe English Hurdle with Copper Nails and Locust Posts—Made exactly same style as Standard Hurdle, except that all rails are extra heavy and posts are of locust wood, longer lasting in the ground than any known wood. Copper nails are used throughout. Panels are 8 ft. 3 in. long, either 4 or 5-rail style. No finer fence can be made.

Early American Post and Rail—Made from hand-hewn live chestnut in either split or half-round rails. Furnished with treated, heavy chestnut posts. Sold per running foot complete with posts and rails. 3 or 4-rail styles, rails are 11 ft. in length.

Architects' Service

Rusticraft maintains a competent service to architects submitting full plans and suggestions for the proper type of fence to use. In corresponding give a rough outline of your requirements.

Estimates of Cost and List Prices

Owing to the continual change in lumber prices, no set price can be established on fence. However, we publish periodic price lists consistently based on the fluctuating costs of materials and labor. They are free for the asking. *Buy any Rusticraft product with complete confidence.*

SOME SUGGESTED APPLICATIONS OF RUSTICRAFT FENCES

Imported Woven French Picket



An harmonious fence that adds charm to most any landscaping scheme. Its closely woven, graceful pickets lend an air of friendliness to large as well as small estates, at the same time giving the strictest privacy. Excellent for road frontages, screening servants' quarters, and a host of other necessary or decorative uses. Erected with cedar framework. Also made in "Cleft" style with pickets spaced at about ¾-in. intervals. No maintainence or upkeep costs for either type.

Domestic Post and Rail



Containing all the rugged charm of the Pilgrims, this early American post and rail fence as made by Rusticraft is both economical and ideal for use on large estates. Its sturdiness gives adequate protection and its seasoned chestnut timbers will withstand the rigors of outdoor service for many years. All rails and posts are hand-hewn in either split or half-round type, of the finest seasoned chestnut timber. Posts are treated with wood preservative.

Domestic English Hurdle

This sturdy type of fence enhances the natural beauty of broad, expansive landscapes. It is close enough to retain smaller animals,



yet strong enough for adequate confinement of larger animals. A popular fence for use on property lines, road fronts, corals, pasture lands, enclosing shrubs, etc. Made in 4 and 5-rail types in both Standard Hurdle, with galvanized nails and treated chestnut posts, and De Luxe Hurdle, with copper nails, extra heavy rails and locust posts. No painting or other upkeep necessary.

Distinctive Red Cedar Garden Furniture

Hand made throughout of genuine red cedar, each piece fitted individually, snug and true. Thoroughly reinforced and braced, this furniture is practically indestructible, and merely mellows with age.

Adds rustic charm to any outdoor setting. Write for prices and styles.

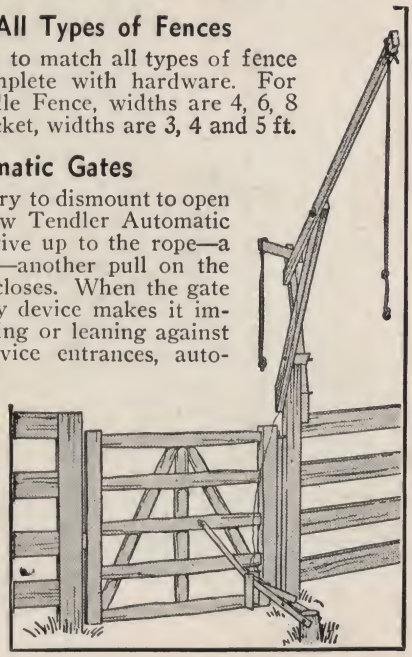
Rusticraft FENCES

Gates to Match All Types of Fences

Rusticraft makes gates to match all types of fence and furnishes them complete with hardware. For Post and Rail and Hurdle Fence, widths are 4, 6, 8 and 10 ft. In French Picket, widths are 3, 4 and 5 ft.

Tendler Automatic Gates

No longer is it necessary to dismount to open your gates. With the new Tendler Automatic Gate you just ride or drive up to the rope—a jerk and the gate opens—another pull on the other side and the gate closes. When the gate is closed, a special safety device makes it impossible to open by pushing or leaning against it. Inexpensive for service entrances, automobile driveways, coral gates, etc. Sturdily constructed with no intricate mechanism to get out of order.



Tendler Automatic Gates come as a complete unit and are either 4 or 8 ft. wide. Write for prices.

BOND MANUFACTURING CORPORATION

WILMINGTON, DELAWARE

CORK-TEX EXPANSION JOINT

CORK-TEX EXPANSION JOINT makes available for the first time the permanent resiliency of cork to compensate for the unavoidable expansion and contraction in structures exposed to temperature changes.

The outstanding characteristics of *Cork-Tex* include: undiminished resiliency and exceptional recovery ability after extended periods of compression; imperviousness to freezing, thawing, and general exposure; no resistance to the full expansion of concrete. Eliminates maintenance as it fills *completely* at all times; maintains cleanliness and beauty of surface as it won't squeeze out; may be painted to suit any color scheme; light in weight; readily cut to any length and adjustable to road crowns or rounded curbs.

Installation

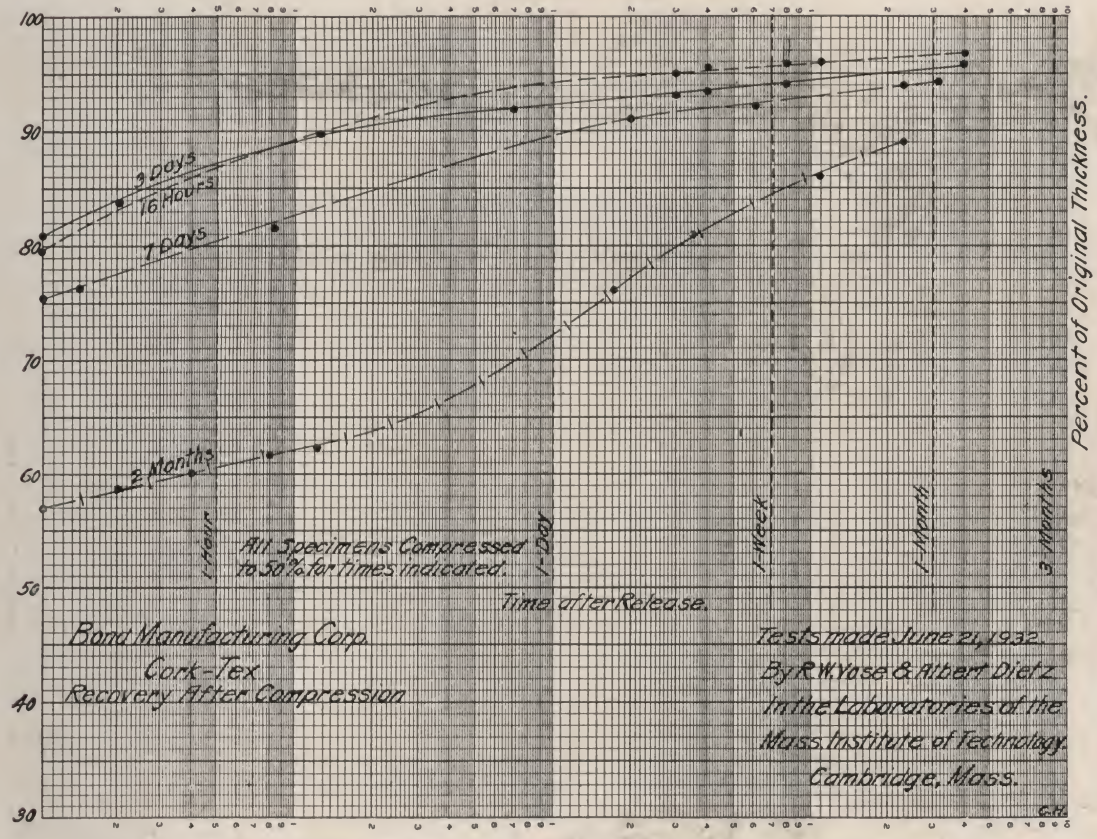
Cork-Tex may be installed in the same manner as other expansion joint fillers.

Diversity of Sizes

Cork-Tex is available in unlimited lengths. Widths up to twelve inches and thickness up to an inch are carried regularly in stock.

Send for detailed booklet and samples.





The chart above (results of tests conducted in the Laboratory of Massachusetts Institute of Technology) shows recovery characteristics of *Cork-Tex* after varying periods of compression.



Closeup of curb joint installed October, 1931 and photographed July, 1932. Note that part of joint is compressed to approximately 50 per cent of original thickness without any of it being squeezed out of position

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